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(AVRADA)**

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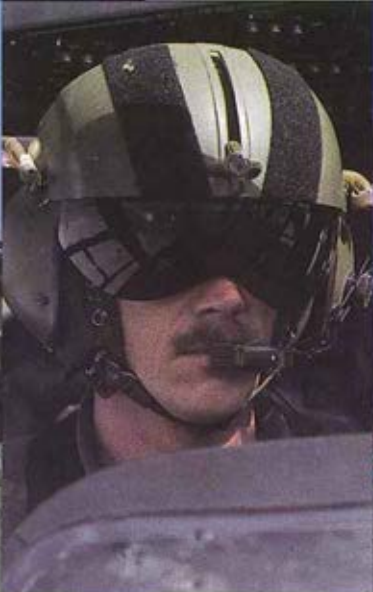
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Central Europe Battlefield 2000: the Combat Helicopter

By General Crosbie E. Saint

Addressing the future role of the combat helicopter requires the powers of a fortune-teller. But even with a crystal ball, events can change. As we look into the crystal, we must look at both the past and the future while using the present as our vantage point.

But seeing the helicopter's future is a daunting task for a ground-bound warrior.

Europe stands at the crossroads of change. We took a firm stand against the people, policies, and powers that threatened to darken and enslave the world and achieved success. Now some think it is time to declare that war can never again happen. But recent events in the Persian Gulf prove how quickly any situation can change.

Soldiers cannot afford to consider peace to be permanent. If war erupts, they don't call the soldiers to fight while accepting excuses. We must conduct the fight. Although current world leaders express peaceful desires, and today's policies may point



GEN Saint is Commander-in-Chief, U.S. Army European Command, APO New York.

the way towards a whole and free Europe, soldiers still have to look at the balance sheet and assess the capabilities of any possible opponent. Having done that, they should prepare to counter those capabilities, both as a deterrent and an insurance policy if peace fails.

Any future war has a great potential for a high-tech, modernized opponent waging mobile armored warfare. Our AirLand Battle Doctrine will still apply, but with a more rapid, lethal opponent, capable of 24 hour continuous operations, and no longer hindered at the start by breaking a solid blue line of NATO forces at the former inter-German border.

Initial operations will no longer see hordes of opponents advancing in perfectly sequenced echelons. Certainly, there will be follow-ons, but depending upon the amount of warning and build-up times, far fewer and more evenly matched forces will

"It [Army Aviation] is not an 'Oh my God!' force to be called upon in times of crisis, or a support asset to be added as an afterthought."

fight it out in maneuver battle over a larger open battlefield lacking solid defense lines. Meeting engagements, force-oriented blows and counterblows, and battles seeking operational advantage throughout the depth and width of the area will revolve around islands of violent conflict. The sum of these small unit actions within the context of the overall operation's development will determine the early battles' results. Soldiers must win the first battles then prepare to fight the enemy's reinforcements arriving overland, an advantage still granted an opponent, for major reinforcements are still carried by sea to the war region.

Dominant Force

NATO's thinner, "Post CFE" forces will fight on a wider, faster, 24-hour battlefield so they must be more agile to beat their opponents. Every battle capability will have to be enhanced for the smaller force to outpace the enemy. Technology will be critical. Romantics who claim that man is still the dominant force in warfare are correct, if all other things are equal or close. But a naked man normally does not do well against one armed with a modern weapon. The man who is best armed with the right mix of tank, aircraft, helicopter, sensors, intelligence platforms, and munitions and is organized into lethal organizations whose actions are synchronized, is the dominant force on the modern battlefield.

Corps-sized forces are the future decision-achievers. Corps are the largest self-contained U.S. combat force generating the required combat power simultaneously to fight deep, close, and rear operations on the future extended battlefield. Also, no

other force can accept, control, and if need be, sustain the multinational forces which may be predominant on the future European battlefield.

The Aviation Brigade is the Corps Commander's force to maintain the initiative, to shape developing operations and to influence the battle outcomes of the islands of violent conflict that will drive the division's battles. This Brigade will be the Corps force with the greatest capability to maneuver combat power over the larger distances in the least time.

But why the helicopter for the future battlefield? We should ask ourselves what does combat require and see how that effects the future battlefield. The answer centers on technology. Equipment capabilities shape tactics and emerging technology has improved all of these. It is this improvement which has doomed the horse, obsoleted the spear, and ended the tactics of massed formations of walking men. We want weapons that can generate incredible killing power, that can move rapidly over greater distances, and that we can control individually and by unit. Those requirements spell out the key characteristics of the combat helicopter.

The helicopter is a special system. It can be a weapon, a sensor, an extension of the warrior himself, and a cargo carrier. The helicopter brings unique capabilities to the battlefield, but it also must be used wisely. Battles are won by warriors who capitalize on the strengths of their weapons and who overlap systems to offset their weaknesses. This is true for helicopters. They can work independently, or in concert with the ground maneuver, the integrated supporting arms, and the Air Force. Like every weapon, we must play to its strengths.

Endurance

A close examination of this century's wars indicates that combat has progressed more towards continuous operations.

Movement of reinforcements, logistics, and command and control have improved so significantly that man's physical capacity to endure is seemingly the only hindrance to operations that continue around the clock. The battle philosophy of an adversary who forces units into battle in sequenced echelons to grind down an opponent by violent day and night combat requires that our forces have the capability to fight the same way.

Offensive actions requires more than a cookbook of attack recipes. Commanders must imbue their troops with the offensive spirit both in training and in combat. This spirit is the best preventive against the loss of battle initiative at the small unit level. The commander retains the offensive spirit in fighting his battle by reacting quickly, by striking the enemy when and where he least expects it, by retaining flexibility, and by generally focusing on seizing the initiative. These actions can all be enhanced by the strengths of the modern combat helicopter.

Keeping Pace

Technology has multiplied combat power such that a new wrinkle appears. The new issue is "Can the Commander's mind and his organization keep up with the tools of the trade?" Forces out of synchronization are forces that will fight alone and may be defeated piecemeal. Doctrine and enhanced communications only supply part of the solution.

Modern battle commanders and staffs will train to meet a tempo and lethality never before seen in land combat. Future battlefield operations require that attack helicopters be included as a key part of the scheme of maneuver. It is not an "Oh my God!" force to be called in times of crisis, or a support asset added as an afterthought. Intelligence Preparation of the Battlefield (IPB), rehearsal, and trigger points will be crucial to integrate and synchronize attack helicopters properly.

From the perspective of a Corps commander, the AH-64's capabilities are best used for rear and deep operations. Deep is a relative term. The Apache gives the corps commander a 70 to 150 km reach into the enemy's rear. Placement of the Battle Coordination Line delineates the Deep battle between the division and the corps. But it is the Corps commander who primarily orchestrates and fights deep operations. His key deep battle decision is where to focus his combat power to achieve his aim. Then, deciding how best to use his attack helicopters for a deep mission, the Corps commander carefully assesses the real risks versus the results expected based on the IPB and his vision for bringing his forces to bear.

The Corps commander uses terrain objectives for orientation and planning only. Enemy forces are the real objective. The key to integrating combat aviation forces into the scheme of maneuver on Battlefield 2000 is the ability to see the battlefield 24 to 72 hours prior to execution and then plan and coordinate helicopter integration in a corps integration cell.

However, we must address some difficult issues and current shortcomings in order to maximize the capability of the combat helicopter and increase its effectiveness on the Battlefield 2000. What are the areas where quantum leaps are still required?

- The natural enemy of an Apache is an enemy attack helicopter. Attack helicopters with an air to air capability such as the Hokum require us to have an air to air capability also. The current air threat posed by the Hokum gives us an urgent requirement to complete the air to air missile and cannon upgrades to our attack helicopter force. Air to air, however, is a self-defense capability. The main Apache role is still ground attack.

- Combat weather forecasting requires an oracle's talents and a surgeon's precision, which we don't have. Weather planners must forecast FLIR quality across the battlefield 2-3 days out. This is essential planning data for night vision device use.

- The crew/maintenance ratio is a prime degrader of continuous operations. Crews



and maintenance personnel must rest. The optimum mix is to have at least 1.5 crews per aircraft and at least twice the authorized maintenance personnel for continuous operations. This problem has been addressed in USAREUR, but resourcing active organizations to that level in peacetime is difficult. Without this manning the organization will break down in about 72 hours of continuous wartime operations.

- Position locating must be improved in operating over extended ranges, in the deep environment, and in integrating other forces into the battle. Army Aviation needs a navigation system accurate to 3-5 meters.

- Additionally, units must have a lightweight camouflage cover in order to protect the attack helicopter assets while on the ground. This system should be IR and radar scattering and capable of being carried in the aircraft and installed by the pilot and co-pilot.

- Finally, the lethal Battlefield 2000 will require that we maintain the highest level of

technology in aircraft survivability equipment. This means radar and IR jammers, chaff and flare dispensers, radar and laser warning receivers, exhaust suppressors, and anti-radiation missiles. We must look to the future and be like the scout of old—be prepared.

Remember that combat helicopters are only as good as the pilots that fly them and the units that fight them. We have outstanding individual pilots and individual pilot training programs. It is our challenge to insure that our leader and unit training programs keep pace with the technological and doctrinal requirements of Battlefield 2000. Leaders, pilots, support crews and training lay the foundation for battlefield success. The Apache and its teammates in the Aviation Brigade are key components in the AirLand Battle and will continue to be so on any future battlefield.

We have great potential. We gotta get with it before the next battle, and be ready for the LH. ■■■■

Military Qualification Standard (MQS) System

By Major General Rudolph Ostovich, III

Every officer in the Branch knows the contents of his or her Aircrew Training Manual (ATM); but, how many of you know about Military Qualification Standards or MQS? In this article, I want to discuss the MQS system and challenge all officers and commanders

within the Branch to become as familiar with the MQS acronym as they are with the term "ATM." To appreciate the importance of MQS, however, you must first understand the overall structure of our officer training and professional development system and where MQS fits.

The development of leaders comes from progressive and sequential education, training, and experience that officers receive throughout their careers. Leadership development begins in the precommissioning phases of training, continues through commissioning, branch education and operational assignments, and culminates only when you

complete your military service. The leader development process depends on three pillars for its success: institutional training, operational assignments, and self-development. Each pillar is mutually supporting yet independent. All three are required for successful leader development.

As a branch school commandant and the Aviation Branch Chief, I am directly involved with the institutional training pillar. This instruction provides essential branch-related education that enables our young officers to become productive junior leaders. For example, the training that aviation company grade officers receive during the Officer Basic Course, Officer Advance Course, and the Combined Arms and Service Staff School fall under the institution training category.

Commanders are key to our second leader development pillar by providing challenging and successful operational



MG Ostovich is Chief, Aviation Branch, Commanding General, U.S. Army Aviation Center and Ft. Rucker, AL and Commandant, U.S. Army Aviation Logistics School.

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assignments. By establishing positive command climates we provide our officers the opportunity to grow and learn while we, within the bounds of safety, underwrite their mistakes. Coupled with a climate that fosters growth, carefully developed and properly supervised professional development programs will accelerate the assimilation of the values shared by our profession and the ability to execute the precepts of our warfighting doctrine.

As professional soldiers, each of us is directly involved and responsible for the third pillar, self-development, much the same way as you are the one ultimately responsible for your development as a leader. Self-development includes professional reading and self-study as well as assimilation of skills and lessons learned through experience. To assist you, MQS has been designed and established as a means to focus your efforts.

The Link

MQS provides the link between institutional training and operational assignments. It provides commanders with the flexibility needed to establish leader development programs for their officers that complement METL-driven unit training programs. Training organizations to be proficient in their METL is a complimentary interaction between the Aircrew Training Program and MQS system, and commanders should tailor both MQS task training programs and professional reading programs to support their METL-based unit training plans. Leaders correlate the lessons learned through crew, team, and unit-level training by applying the knowledge garnered through rigorous courses of self-study and the mentorship of commanders. The MQS system provides a framework and establishes the responsibilities and standards for common and branch specific training, education, and professional development of Army officers. It also identifies critical battle-focused tasks, skills, and knowledge that officers should acquire at each stage of their careers.

Presently, the MQS system has three levels: MQS I, MQS II, and MQS III. MQS I

applies to precommissioning training, MQS II applies to company grade officer training, and MQS III, once completed, will apply to field grade officers. The system has two components: a military task and knowledge portion and a professional military education battery. The military task and knowledge component provides critical tasks on which officers must train. It establishes a professional reading and self-study program which must be completed.

The professional military education component, by comparison, focuses on improving cognitive skills. This portion of the MQS system also contains a reading program and, for selected officers, the opportunity for advanced civil schooling.

MQS II is designed for and applies to company grade officers in the active Army, U.S. Army Reserve, and the Army National Guard. The goal of MQS II is to prepare company grade officers to accomplish their wartime tasks, provide the basis for promotion to major, attend Command and General Staff College (CGSC) level schooling, and prepare officers for service in positions of greater responsibility. It provides the bridge for officers to progress through designated "passage points," the first and second milestones in their career. The requirements for success include: completion of appropriate branch schools and developmental assignments; demonstration of proficiency in common and branch tasks; and completion of specified portions of the Foundation Reading Program. The first passage point is reached when officers enter their branch advance courses. The second passage point occurs when the officers complete their company grade careers and either enter resident CGSC or enroll in the nonresident course.

The MQS II implementation plan will involve distribution of both a common manual and a branch manual. The common manual will be distributed during January to March 1991. Each lieutenant and captain will receive a personal copy of the MQS II common manual which will be fielded through the pinpoint distribution

(MQS — continued on page 62)



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The new Panther 800 will be a low-risk, cost-effective light tactical helicopter with exceptional multirole capabilities.

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bilities of the Aerospatiale Panther Helicopter with the U.S. Army's next-generation power plant—the T800 from LHTEC—along with IBM's integration of existing avionics systems.

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L T V : L O O K I N G A H E A D

Director's Overview

By David V. Gaggin

The rapid evolution of avionics technology is changing our processes, products, and organizations. The biggest challenge that we in the avionics community have is to change an acquisition system that had been established for the development,

fielding, and support of discrete electronic sub-systems to an organizational structure that can handle highly integrated electronic mission equipment packages. This change must occur in such a way that not only will we be able to handle new systems, but also continue to support and upgrade the older technology residing in fielded systems.

Avionics architectures are changing from a federated system of loosely connected discrete elements, where each "black box" performs a specific function such as FM Comm, to an integrated system where a

central array of processors executes the entire set of avionics functions. In the latter case, the FM Comm function might only be

comprised of a set of algorithms distributed between multiple processors. This will eventually lead to a much lighter and less expensive avionics system than a federated approach with equivalent capability. In addition, fault tolerance, functional upgrades, diagnostics, automation, and sensor fusion will all be greatly enhanced. However, acquisition of highly integrated systems will require a new approach to doing business that will affect far more than the immediate aviation community.


Subsystem Development

Aviation electronics R&D organizations that have historically been responsible for the development of complete subsystems, such as a radio or FLIR, will still be responsible for that function, but will not develop all the components required to make it operational on an aircraft. They will only be developing subsystem unique



Mr. Gaggin is Director, Army Avionics Research and Development Activity, Ft. Monmouth, NJ.

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tem is already in production for the Tiger combat helicopter under development by France and Germany.

Performance is the key to military applications. Thanks to our high precision navigation and air data measurement systems, aircraft from the Transal transport to the Rafale multirole fighter are expanding their mission capability envelopes.

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“This approach will require developing cross-disciplined engineers with a much broader knowledge of pilotage, targeting, and other missions. . .”

components instead of entire systems, but they will be playing a much more active part in the system integration. Also, to maximize the capability of an integrated system, the mission equipment package will need to be developed from more of an operational perspective focusing on mission segments rather than a compilation of discrete functional tasks. For example, the total pilotage mission will be the primary focus of the development rather than the individual communication or navigation tasks. This approach will require developing cross-disciplined engineers with a much broader knowledge of pilotage, targeting, and other missions than was previously required.

Integrated Systems

To successfully implement this concept, an organization needs to be established that can focus the Army electronic activities towards developing technology that supports integrated systems. There will always be a need for a technical expert on receiving and transmitting SINGARS waveform on a vehicle, for example, but there will not be a long-term need for the development of a discrete airborne version of the SINGARS.

It is also apparent that the problems Army Aviation is facing are rapidly becoming more and more relevant to ground vehicles as they too are requiring additional capabilities. Although some of the cost and weight restrictions may at first appear different from those of aviation, in

reality the problems and technology solutions are very similar. After all, the tank is the ultimate nap of the earth vehicle with similar communication, targeting, and night operation requirements as a hovering helicopter. An example is the MIL-STD-1553B data bus, originally believed to be far too expensive and sophisticated for tanks, is now being designed into new development programs, a short decade after aviation first required their use.

Broad Expertise

The establishment of a Vehicle Electronic Integration Center is being planned to address these problems. Its goal is to develop a group of integration specialists that have a broad expertise across multiple disciplines. They will be supported by technology application engineers, whose responsibility will be to provide functional expertise for all integrated and non-integrated platform systems; focus the technical efforts of the other Army electronic development activities towards solving vehicle specific problems; and act as the technical focal point for the CECOM avionics logistics project managers. Of course, the ground and air vehicle PMs will be a primary beneficiary of the additional electronic capability available to support them.

Technology is changing the way we build air and ground vehicles. The Vehicle Electronic Integration Center will allow us to develop the skills, focus the resources, and change the processes that we will need in the foreseeable future. ■■■

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AVRADA on the Go

by Bobbi C. Campbell

Our Exhibit "Team" was really on the go this year. Our motto became "Have Bag, Will Travel," as we traipsed off to Orlando, FL for the AAAA Annual Convention; Asbury Park, NJ, for Monmouth Chapter AAAA Regional Avionics Symposium (not far from home, but still away from the office for five days); and Aberdeen Proving Ground, MD, for the AMC Technology Expo, where we displayed the System Test-bed for Avionics Research (STAR) helicopter; Voice Interactive Avionics (VIA); and the Mission Planner. The AVRADA video tape was played continuously at all shows.

The highlight of the year was undoubtedly the biennial AAAA Monmouth Chapter Avionics Symposium, keynoted by the Honorable George J. Hochbrueckner, Congressman 1st District, NY. Other speakers included Thomas L. House, Technical Director, AVSCOM; George T. Singley, III, Deputy for Research and Technology/Chief Scientist, Office of the Assistant Secretary of the Army for RD&A; and BG Alfred J. Mallette, CG, U.S. Army Communications-Electronics Command (CECOM).

Nine Generals visited our displays at the AMC Technology Expo, including GEN William G. T. Tuttle, CG, U.S. Army Materiel Command (AMC), LTG Billy M. Thomas (former CECOM Commander) and BG Alfred A. Mallette. In addition, AMC taped VIA for inclusion in their overview.

AVRADA was a major contributor to CECOM's Organization Day and Armed Forces weekend held in May, 1990. One of employees participated with the All-



Mrs. Campbell is in the Technical Plans and Financial Management Division of AVRADA.



American Parachutists Team from Fort Bragg, NC, and two of our pilots were facilitators for the AH-64 Apache and were pilots for the para drops and the rappelling. Another of our pilots flew a Cobra in, and gave the crowd a thrill as he circled the field and then gently "put her down."

GEN Tuttle also visited us at Fort Monmouth this year. The STAR was rolled out of the hangar at Lakehurst, NJ for the first time in seven months and flown to AVRADA where GEN Tuttle was briefed on the Digital Avionic System. He was also given a demonstration of the VIA integrated in the JOH-58C helicopter.

Well, it's finally time to unpack our bags. No more exhibits until the AAAA Annual Convention, which I'm sure you all know by now is being held in St. Louis, MO, 10-14 April 1991. We're already "gearing up" for that one and are hoping we can give as impressive a show in St. Louis as we did in Orlando. See you there!

||||

Avionics For Air-to-Air Combat

By William Gill

The Avionics R&D Activity (AVRADA) initiated a program in mid-1989 to develop and demonstrate the avionics systems necessary for air-to-air combat. Central to this development is the transmission of Forward Area Air Defense (FAAD) target aircraft tracks

from a ground station to an aircraft using either Line-of-Sight (LOS) or Non-Line-of-Sight (NLOS) digital burst communications, and displaying these tracks pictorially in the aircraft cockpit.

LOS/ATHS

The ground station for the Airborne Target Handover System (LOS/ATHS) utilizes a Collins Cockpit Display Unit (CDU) to process and display target tracks. This CDU has considerable processing power and is capable of displaying graphics. The CDU software that allows processing and displaying aircraft target tracks was developed and written by AVRADA and is currently working on an AVRADA hotbench. The



Mr. Gill is PL of Tactical Information Systems Div. of AVRADA, Ft. Monmouth, NJ.

target tracks displayed on the CDU can be transmitted to a selected aircraft (or multiple selected aircraft simultaneously) by a single button push on the CDU. If the communication is LOS, the ATHS is used with a LOS radio such as the ARC-201 Single Channel Ground Air Radio System (SINCGARS), the ARC-186 AM/FM VHF radio, or the ARC-164 HAVEQUICK radio. The ATHS, developed by AVRADA, is a smart modem/processor that encodes the message and uses Frequency Shift Keying (FSK) to modulate the radio at 1200 bits/second. The ATHS also provides error correction (Hamming Code) and jamming robustness through a process called bit interleaving. The ATHS sends blocks of data and bit interleaving means that all of the "one" bits are sent first, followed by the "two" bits, the "three" bits, the "four" bits, etc. In a jamming environment, if the signal is jammed for a short period of time, only



the "one" bits, or the "two" bits, etc., of each 12 bit alphanumeric character would probably be lost. The error correction circuitry can replace one jammed bit per character, allowing accurate communications even in a jamming environment. Without the bit interleaving, several bits in the same character would be lost, which is beyond the capability of the error correction feature to correct. When the ATHS, with its very short burst communications and jamming robustness, is coupled with an ECCM or "hopping" radio such as SINGARS, it becomes extremely difficult to detect or to jam. AVRADA is currently working on an Enhanced ATHS (EATHS) which will operate at 16,000 bits/second (vs. current 1200 b/s) and will incorporate more robust error correction capability (Golay code).

HF/Modem

If the aircraft is positioned such that it cannot receive LOS communications from

the ground station (such as out of range or in hilly terrain), then the ground station will use a NLOS radio to send the target tracks to the aircraft. The NLOS system that AVRADA is using for this demonstration is a Collins ARC-217 High Frequency (HF) radio with 75 to 1200 bit/second modem. The radio has Automatic Link Establishment (ALE) which sends out a short tone to the receiving radio on each of several pre-assigned frequencies. The receiving radio then sends a return tone to the originating radio. This return tone tells the originating radio which frequency worked best. The return tone provides a numerical measure of how well each frequency got through, called Link Quality Analysis (LQA). The LQA is based on the received Signal-to-Noise ratio. AVRADA is developing CDU software that will monitor the LQA and adjust the modem transmission bit rate according to the quality of the HF link. For example, if the LQA is high, the modem would be operated at its maximum bit rate of 1200



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bits/second. If the LQA is lower, the modem would be controlled to operate at lower bit rates, i.e., 600, 300, 150, or 75 bits/second. This bit rate will be adjusted lower for poorer HF links automatically, without operator intervention.

Aircraft Displays

Regardless of the communication system used to send the targets from the ground to the aircraft, i.e., LOS or NLOS, the target aircraft tracks will be displayed on the CDUs in the aircraft. The display shows tracks of friendlies, enemies, and unknown (unidentified) aircraft. The crew member can select by a simple CDU button push whether to display all tracks, or just enemy, or friendly tracks. Range is also selectable. Pushing another CDU button will cause a display on the CDU screen of all data known about any aircraft on the display. Typical aircraft data displayed is range and bearing, altitude, airspeed, heading and track. The display shows whether the "bogey" is a helicopter or fixed wing. Based on the information provided, the aircrew has full situational awareness of all aircraft in his area of interest (AOI), including aircraft that are "over the hill," or out of range of the aircraft sensors. This information provides the aircrew the option of selecting an enemy target aircraft to pursue or ambush, or to take evasive action.

Aircraft Modification

AVRADA is modifying three aircraft for this demonstration program, one OH-58C and two AH-1S Cobras. The OH-58C has been modified to include an AHS, two CDUs, two ARC-186 VHF AM/FM radios, one ARC-164 UHF radio, one ARC-217 HF NLOS radio, and an ASN-137 Doppler HF navigation system. A specially designed HF

(NLOS) antenna is being utilized on the OH-58C that will provide both groundwave and skywave propagation. The use of HF groundwave, not presently used on Army aircraft, will provide good communications out to about 40 km, NLOS. For navigation, the OH-58C has an ASN-137 Doppler. A Global Positioning System (GPS) and a Low-Probability-of-Intercept (LPI) radar altimeter, provided by Honeywell, are also being installed for this demonstration program. (See Secure Operations, below.) The two AH-1S Cobras are being outfitted with two CDUs each, an AHS, an ARC-182 radio (VHF-AM/FM, UHF-AM/FM, and Marine band), the ASN-137 Doppler, GPS, and the Honeywell LPI radar altimeter. The AH-1S and the OH-58C modifications are being documented in a manner that will facilitate adaptation for fleet modification, if desired.

Typical Operations

The operational scenario for this demonstration program is as follows: The Tactical Operations Center (TOC), i.e., the ground station, receives aircraft tracks from the Forward Area Air Defense System (FAADS), typically over Enhanced Position Locating and Reporting System (EPLRS) or Joint Tactical Information Distribution System (JTIDS). (Note: In the objective system, other intelligence data via MSE, or from the Multi-mission Advanced Tactical Terminal [MATT], or from the Commander's Tactical Terminal [CTT], would also flow into the TOC.) Aircraft tracks are transmitted to the Command and Control (C2) aircraft (simulated here by the OH-58C) via either AHS (LOS) or HF/Modem (NLOS). These tracks are automatically displayed in the C2 aircraft.

The commander in the C2 aircraft then sends target tracks to the attack aircraft (AH-1S's in this demo) under his control.

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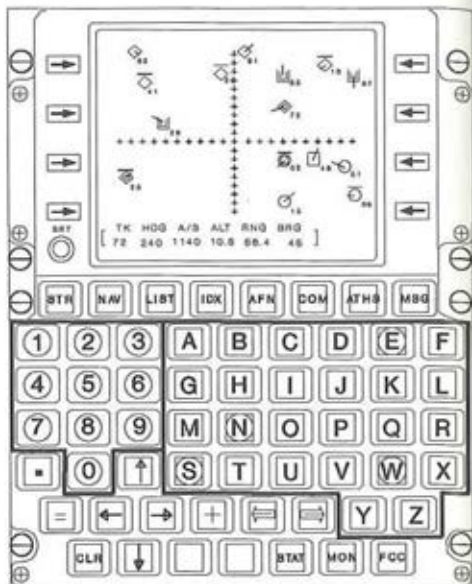
The tracks are automatically displayed on the CDUs in the attack aircraft. The commander in the C2 aircraft can either assign targets to each aircraft or, each attack aircraft can attack targets of opportunity within his assigned sector. Battle damage assessment (BDA) reports can quickly be sent back to the C2 aircraft via AHS and relayed back to the TOC. Each AHS transmission also automatically sends aircraft position, and fuel/stores data, so the commander knows the status of his attack aircraft. AVRADA has written and tested CDU software to control the EPLRS and to display FAADS data received over the EPLRS and is currently developing software to control MATT and to utilize the MATT receptions.

Secure Operations

For certain missions, which are now performed in Radio Silence, the design of these aircraft offer significant advantages. The Doppler and the radar altimeter on current Army aircraft are significant RF emitters and may readily be detected by enemy receivers. The aircraft in this program are being designed to allow navigation by the GPS, a non-emitting receiver, in lieu of the Doppler. Honeywell has provided modified APN-209, LPI radar altimeters which have a 20 to 1 reduction in emissions, compared to the currently used APN-209. Utilizing the GPS and the LPI radar altimeter and an HF/modem in the receive mode only, targets can be sent to these attack aircraft—for example, in a deep strike—and the operation can be performed in an LPI manner.

Secure Communications

A shortcoming of the above system is that the group of aircraft on a secure mission are unable to communicate with each other. A new converter has been proposed that allows very short AHS digital burst transmissions to be sent over relatively short ranges to remain virtually undetectable by enemy forces. AVRADA had been working with Hughes Aircraft to install and test this system on our aircraft, but this aspect of the program was not funded in FY-91.



Technology Transfer

The CDUs, for which AVRADA has developed software for graphics, EPLRS, HF/modem, LPI radar altimeter, GPS, and displaying/controlling FAADS data, are the same basic CDUs used in the Apache AHS Avionics/Integration (AH-64B) program and could readily be installed in these aircraft to provide the above functions.

Once the CDU has graphics capability, many additional capabilities can be added with relatively simple CDU software changes, i.e., Hellfire firing constraints can be shown pictorially, weapons/stores status, etc. The HF/modem would provide communication for deep strikes, NLOS targeting, and general NLOS communications. The LPI radar altimeter would benefit all Army helicopters. The communications systems, as well as the MATT, are also directly applicable to the P31 enhancements to the ASC-15B Command and Control Console which AVRADA is currently developing.



RC-12K Beyond Tomorrow

By Bill Canfield

As the threat continues to become more complex, the tactical commanders require more critical real-time and accurate battlefield intelligence; the modernized RC-12K will meet that challenge. The modernized RC-12K, with mission package enhancement is mov-

ing down the production line. A new data bus architecture will present a user friendly cockpit instrumentation to the pilots. There also is a need to lessen pilot workload, and ensure accomplishment of the mission. The RC-12K aircraft is being modernized to meet those needs. The RC-12K is the platform for the Guardrail/Common Sensor (GR/CS) System that provides communications intercept and emitter location system.

This Special Electronic Mission Aircraft (SEMA) scheduled for fielding in 1993, will have Aircraft Survivability Equipment (ASE),



Aircraft Survivability Equipment/Avionics Control System (ASE/ACS), Electronic Flight Instrument System (EFIS),

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plus a state-of-the-art MIL-STD-1553B software integrated electronic data bus architecture. The data bus integration by AVRADA, will lessen the pilots workload with the installation of an avionic display and a single point of data entry keyboard. Pilots will no longer have to search the cockpit for various electronic control devices for entering and looking for information. All flight data and aircraft check list information will be entered into an electronic cartridge at the mission planning station which will give the aircraft mission planning capabilities before leaving base operations. The pilot will insert the cartridge into the aircraft Data Transfer Systems (DTS) when entering the aircraft. The DTS cartridge data will then be automatically loaded through the 1553B data bus and the appropriate information will be sent to the respective aircraft avionic subsystem.

This integration program will also give the crew the capability to control an array of detectors and countermeasures against the threat of hostile missiles and systems. These ASE systems currently work individually. The integrated system will provide the best protection over a large range of possible parameters to include performing the task of collecting and controlling data to and from the ASE subsystems and the military communications equipment. The man/machine interface between the avionics and the crew is then presented by various pages of information being displayed on the screen by the ASE/ACS.

Additionally, the ASE/ACS will provide in-flight ASE embedded training capability to the aircrew. Prior to take off the Instructor Pilot (IP) and/or pilots will be able to setup in-flight training scenarios at the mission planning station which will be loaded through the DTS into the ASE/ACS for use during airborne training. A training scenario can also be inserted into the ASE/ACS while airborne. The IP will be able to bring up threat warnings during a flight just as if these threats were actually targeting the aircraft.

The training mode presents the same type of information as the normal active mode allowing the student to practice the evasive maneuvers appropriate for each displayed threat while in the simulation mode. The ASE/ACS also allows the instructor pilot to evaluate the student's performance in relation to the threat displayed. During training, if a real threat is encountered, the ASE/ACS is designed to override and terminate the training session and display the real threat information.

The traditional black boxes currently function as Level I items, independent of the other subsystems. Modernization of the avionics provides Level II integration of these systems so the aircraft subsystems can perform their individual functions while being controlled from a single device. This approach accomplishes two main objectives; One is the aircraft space and weight saving of various control heads being displayed by a single control

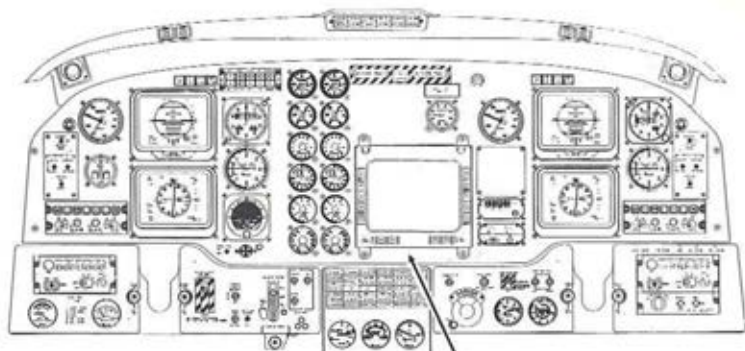
element. The second major benefit is better pilot Man and Machine Interface (MANPRINT), that will lessen pilot workload.

The ASE/ACS configuration is comprised of a Remote Terminal Unit (RTU), a Multifunction Display (MFD), a Keyboard Unit (KU), and an RTU mounting tray. The ASE/ACS interfaces with military radios, secure voice devices, Aircraft Survivability Equipment (ASE), Carousel IV-E navigation system, Global Positioning System (GPS), Data Transfer System (DTS), and Identification, Friend or Foe (IFF) to provide an integrated Control Display System (CDS) for the RC-12K GR/GS aircraft. The ASE/ACS gives the pilot the capability to control the operation of the individual subsystems through bezel switches located on the MFD. The MFD has a single point for controlling and displaying ASE status and displaying threat information from the radar warning receivers, radar jammers, and status of expendables. This is in addition to the capability of the MFD presenting other non-ASE avionic information.

The CDS was originally designed by Honeywell Inc., Albuquerque, NM for installation into the OV-1E Mohawk aircraft. The ASE RTU required substitution of the OV-1 mission Input/Output (I/O) circuit card with an RC-12K system I/O circuit card.

The RC-12K Non-Developmental Item (NDI) aircraft is currently being enhanced with an improved GR/CS mission equipment package. Concurrently, Beech Aircraft Corp. will apply the block improvement of the Primary Mission Equipment (PME), an Electronic Flight Instrument System (EFIS) and the ASE/ACS MIL-STD-1553B data bus integration into the RC-12K host system aircraft.

The RC-12K instrument panel will be modified by removing the Inertial Navigation System (INS) control display unit, the APR-44 control, the APR-39 control and the APR-39 scope from the center portion of the instrument panel. The ASE/ACS MFD will be installed in the area of the removed controls. A bezel will be installed in place of the APR-39 scope (see



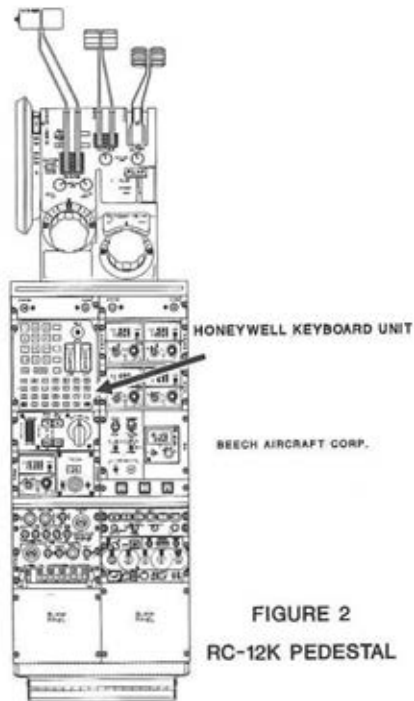
HONEYWELL MFD (Center) with surrounding
DUAL EFIS Displays

Figure 1

RC-12K ASE/ACS & EFIS INSTRUMENT PANEL

Figure 1). The pedestal will be modified by removing the M130 control, the flare dispenser control, one ARC-164 UHF control unit, and the ARC-201 control unit. The ASE/ACS KU will be installed in the forward portion of the pedestal. The KU and MFD will now be the control for the removed items (see Figure 2). The pilot and copilot control wheels will be modified to relocate the flare/chaff dispenser switches. The new locations will be chosen to optimize response time, consistent with human factors engineering principles. Subsequently, the RC-12K aircraft will have Electromagnetic Compatibility (EMC), Electromagnetic Interference (EMI), and Tempest tests conducted. All ASE/ACS aircraft configuration changes will be reflected in the RC-12K operators' checklist, operators' manuals and maintenance manuals. The training curriculum will be updated to ensure the crew is trained in accordance with the new ASE/ACS configuration.

AVRADA's function and commitment to the Soldier is helping to ensure that the RC-12K GR/CS aircraft remains a mission effective, reliable, and supportable asset tomorrow and into the next century. ■■■■



HONEYWELL KEYBOARD UNIT

BEECH AIRCRAFT CORP.

FIGURE 2
RC-12K PEDESTAL

HF NOE Communications Radio

By Bernard V. Ricciardi

The Nap-Of-the-Earth Communications (NOE COMM) Required Operational Capability (ROC) is currently being revised to include new operational requirements to enhance the effectiveness of the High Frequency (HF) radio for Army aviation. Current

aircraft HF radios are difficult to operate, difficult to establish useable communications links, and poor performers in the jamming environment. The revised ROC specifies the need for an HF NOE COMM Radio system that is simple to operate and will provide up to 300 kms communications in the threat with a greater than 90 percent probability of link connectivity.

Concept Evaluation Program

Over the period of 6 to 28 August 1990 the TEXCOM Aviation Board conducted a Concept Evaluation Program (CEP) at Ft. Rucker, AL. The purpose of the CEP was to evaluate the capability and



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operational effectiveness of new HF radio technology to satisfy the stated ROC requirements. The key technology areas evaluated were Automatic Link Establishment (ALE), signal processing enhancements, Anti-Jam (AJ) frequency hopping, and low speed data transfer techniques.

The CEP was supported by AVRADA engineering personnel along with representatives from Bendix/King General Aviation Avionics Division, in Olathe, KS, and Rockwell Collins Government Avionics and Communications Division, in Cedar Rapids, IA. The CEP was conducted using two UH-1H helicopters modified to accept the manufacturers prototype systems. Performance was measured using alphanumeric spot report type messages transmitted over HF ground wave and sky wave modes to ranges out to 320 km. Data burst messages were transmitted along with

voice over the circuits established. Tests were conducted over the sunrise, day, sunset and night time periods. TEXCOM found that technology is available to provide 90 percent connectivity with 90 percent intelligibility to satisfy the ROC in a "simple to use" radio.

Operator Interface with ALE

Army aviators are pilots not communicators, and as such can not be expected to be familiar with all the anomalies associated with HF communications. Factors such as proper frequency selection based on sunspot conditions, time of day and area of the world, circuit link length, etc., are best left to the scientists who deal with this mode as a way of life.

Reports from the field have generated much concern about how the operator interfaces and uses the HF radio. ALE is a feature that provides the operator with an automatic means of establishing HF circuit connectivity by electronically choosing the best operating frequency (of those assigned) for operation. This feature alone can provide the 90 percent probability of successful communications connectivity required. However, the aviator must accept a small penalty in the time it takes to link up the two stations.

Simplified Workload

The HF NOE COMM radio will provide a simplified user interface where all that is needed to establish a link is the other person's addressable call sign, or his "telephone number". The user (pilot) workload is greatly simplified to push button "dialing in the number" and waiting for the "phone" to ring once circuit connectivity is automatically made.

This simplification of the pilot workload is made at the sacrifice of an increased Army aviation net management. The net manager in essence acts like the telephone company and must tightly control the frequency assets, selective addresses (telephone number listings), link and netting procedures, loading keys and variables, and overall system operational maintenance.

Data from the CEP shows that ALE provided typically greater than 90 percent voice intelligibility and connectivity scores under normal atmospheric conditions. It was noted that during thunderstorm activity these scores dropped below 90 percent; however, under these conditions the data burst mode achieved greater than 90 percent scores.

The ALE function combined with voice and/or data will provide Army aviation with an all terrain and all weather communications capability over extended ranges in the low level flying regime.

Radio System Performance

The HF communications mode has historically been considered unreliable in Army aircraft because the channels are inherently noisy and the desired signal is sometimes masked by other undesired signals.

Recent advances in digital technology have made significant improvements in receiver design to greatly reduce the channel noise and reduce interference to a point where at least a 10 fold received signal to noise improvement over what is now fielded can be expected. The CEP tests noted the quality of the signals received which resulted in good intelligibility scores recorded. This technology feature will be inserted in the NOE COMM radio.

Data Modem

Technology developed by AVRADA and demonstrated in the CEP has shown that a data burst capability can provide very high connectivity for the HF link with low probability of interception and detection.

Also, this can be achieved with a low transmitter power output of 10 watts. The AVRADA current development effort is tailored to demonstrate a flight following capability for aircraft flying at extended ranges. User CEP demonstrations of the low speed (75 bps) burst modem, on HF channels, have been very successful.

The low speed data burst modem has achieved a probability of success of much greater than 90 percent. The low speed

“The ALE function must provide the operator with a useable frequency without several minutes of waiting.”

modem capability will be part of the new radio.

CEP Suggested Improvements

● “The ALE function must provide the operator with a useable frequency without several minutes of waiting. Most operators in a tactical environment would not rely on a radio that requires a lengthy period to produce a useable frequency.” This is a prime example of where the net manager can effectively provide the necessary procedures to greatly shorten the time.

● “The modem used for data burst during this CEP worked well for messages transmitted and received. But in the aviation environment, operators need a more compact system that is incorporated into the radio, easy to use and crash worthy for personnel safety. The prototype modem used was bulky and had to be secured with straps for safety.” Steps are being taken by AVRADA to integrate the data modem input/output terminal into a standard aircraft cockpit management display eliminating the need for a bulky strap on device. Consideration is also being given to incorporate some limited features in the HF NOE COMM radio display.

● “The HF radio should have a simplified control unit with a minimum amount of functional control knobs and switches for operational modes.” This is the key issue for the ultimate success of the new radio.

Acquisition Plans

To fulfill the requirements of the revised ROC, a flexible, software intensive radio system will be procured. The procurement will be a competitive Non Developmental Item (NDI) acquisition for a basic radio with phased in Pre-Planned Product Improvements (P3I). Technology for all the areas has been developed and

demonstrated by the CEP. However, there are many technical interaction (the ALE function working with the ECCM function and the communications security function) and Army interoperability issues (operation with Army ground units) which must be clearly defined to satisfy all the ROC requirements. The P3I phase of the acquisition is intended to resolve these issues and provide a direct means for inserting the latest technology into the NOE COMM radio and updating fielded equipment.

The initial NDI phase will provide a basic radio that: will be simple to operate; will be capable of being operated from an aircraft standard data bus; will have an addressable ALE that meets the Army standards; will have a 75 bps data burst modem capability; will be Form-Fit-Function (F3) compatible with the current AN/ARC-199 radio; will employ digital signal processing; and will have an open architecture which would accommodate the P3I.

The P3I phase of the program will add ECCM and full data modem capabilities. The CEP confirmed that frequency hopping can be used effectively in the HF NOE COMM radio. Scores in this area were also greater than the 90 percent criteria. However, due to the uncertainties in Army operational procedures and Army ground radio interoperability requirements, this function will be added as part of the P3I phase of the program.

The interaction among all the radio functions will be defined and demonstrated. P3I affords the logical means to do this with minimum program risk. The F3 goal (backwards compatible) will still be met, although some aircraft additions may be required for emerging changes (i.e. the addition of fiber optic cables or an additional applique unit).

||||

AMP: A Battlefield Necessity

by

Dominic C. Fedele and Captain (P) Rick Esposito

As the age of automation is descending on the battlefield, nowhere is the need for automation greater than in the aviation community, especially in mission planning.

Aviation mission planning is an effort to bring the major

phases of an operation together into one coherent plan. On today's battlefield, Army aviators do not have the advantage of automations to plan their missions which include tasks that are burdensome, intensive, subjective, time consuming, and error prone. The normal mission planning sequence, which results in the commander selecting the best Course of Action (COA), is typically based upon the recommendation of the staff. A well informed staff will result in COAs being evaluated faster and more COAs being considered in a short time frame.

Some of the mission planning tasks that are either labor intensive, time consuming, or prone to

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error are route planning, fire support, communications and preparation, and distribution of operations orders, maps and overlays.

Route Planning is one of the more time consuming phases of mission planning. As a minimum, the planner must select his route based on terrain, enemy locations, type of mission, time of mission, and weather. Once a general route has been selected, the planner must pick specific waypoints, highlight hazards and calculate Time, Distance, and Heading (TDH) for each leg of the route. After this has been done the planner must calculate fuel required for the mission. If wind speed or direction significantly change before

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mission time then TDH and fuel must be recalculated. The planner may want to compare multiple routes; therefore, he must perform each of the planning steps described above for each route. Finally, a route card must be produced so that the aircrews have representation of that route in the cockpit.

Planning for fire support can be as simple as providing a call sign and frequency for the firing battery supporting your mission or it can be as complicated as having preplanned fires with specific time on targets and overlays with registered target reference points. Additionally, fire support may include close air support from Air Force assets. Whatever the level of complexity, fire support must be integrated into the mission and this information must be passed along to the aircrews.

Communication planning at the battalion level involves manipulation of data and line of sight analysis of communication systems with surrounding terrain. In most units a communication card is produced for the benefit of the Command, Control, and Communications (C3) element and the aircrews.

Critical Documents

Finally, the preparation and distribution of operations orders, maps, overlays and mission cards is as critical as the mission planning itself. These documents graphically and textually describe the mission. If the mission has been planned to cover every contingency, but the output is done poorly, then the execution of the mission may not go smoothly. Currently, the preparation of these documents is done by hand and is normally copied at each level numerous times. Data is often copied incorrectly making it necessary to constantly check and recheck which is extremely time consuming.

Recognizing these problems, the Training and Doctrine Command (TRADOC) Aviation Center located at Fort Rucker, AL, prepared a draft Required Operational Capability to support the development and near term fielding of the Automated Mission Planning System for the conventional aviation

community. The Special Operations Aircraft Program Manager also requested AVRADA develop a mission planning system to support the MH-60K and the MH-47E flight test program. The AMPS is currently under development by AVRADA in support of the SOA PM.

The AMPS is intended to reduce the work load and time required to plan missions. Utilizing a user friendly, menu-driven operator interface, the AMPS is being designed to ensure ease of operation for error free planning. As a minimum, a modern day mission planning station intended to support modern day aircraft would be inadequate without the following essential elements: the use of an electronic map data base, integration of specific aircraft performance characteristics in the planning process and an output data transfer device. These three elements are considered fundamental in the AMPS development program.

The AMPS program is committed to the use of Defense Mapping Agency (DMA) products as the input source of the electronic map data base (specifically, ARC Digitized Raster Graphics [ADRG] and Digital Terrain Elevation Data [DTED]). The AMPS is designed to compress the data base by a factor of 24 and store the compressed data in 0.5 inch square tile format, which is consistent with DMA format. This concept allows for rapid manipulation of the data base and rebuilding of the display screen in about three seconds. Together, ADRG and DTED provide the planner with three dimensional information of the area of interest.

The inclusion of an electronic map display in mission planning provides the planner with the ability to integrate a myriad of overlays such as enemy situation, friendly situation, threat locations, threat lethal and detection ranges, phase lines, air corridors, and other "situation awareness" information. Intervisibility plotting of threats, moon shadows, and GPS satellite reception can be displayed and are considered essential. The importance of real time intelligence information, the location of moon shadows for Nap-Of-the-Earth (NOE)



FIGURE 1. CAPABILITY PLANNING

flying using night vision goggles, and GPS satellite reception during NOE flight cannot be overstated. This information, when presented graphically, simplifies route selection and when coupled with the aircraft performance planning function allows the AMPS to automatically generate and display a proposed route as well as create the route folder. The route can be manipulated by the planner and tailored as necessary. The AMPS will also provide a mission rehearsal capability consisting of DTED and appropriate overlays, rotated to create a perspective view, then updated at approximately 30 frames per second to create and display a flicker free image as the proposed route is flown. The planner will have the ability to interrupt the rehearsal at any point, take control of the data base to explore alternative routes in perspective view, change the proposed route, and return to the rehearsal mode.

The ability to execute a planned mission is largely determined by the aircraft's performance characteristics and capability. The performance characteristics of a CH-47 are dynamically different than those of an AH-64. However, different aircraft types often fly missions together; therefore, the AMPS must consider the performance characteristics of each aircraft assigned to a mission during the planning process. The aircraft's capability, which is determined by fuel, weapons, etc., has a direct impact on aircraft performance. The AMPS must

consider the aircraft loads for a given mission to determine the aircraft capability. Fig. 1. Capability planning, aircraft configuration, and environmental considerations all form part of the performance planning algorithm which must be considered in planning missions and ultimately in the preparation of a Performance Planning Card (PPC), Fig. 2. The AMPS design includes the use of generic performance equations which, when coupled with a given aircraft set of coefficients, will execute performance planning. This concept, as opposed to digitizing all the performance charts for each aircraft configuration, requires significantly less memory and can be executed much more quickly. Additionally, if an aircraft configuration changes significantly (i.e., a new engine), only a new set of coefficients would be required to reflect this change. However, using the digitizing approach, even minor configuration changes would require major revisions due to the changes to the performance charts. The least desirable method is the current method which requires the pilot to wade through roughly 100 pages in the performance section of the operator's manual. This method is not only time consuming, but error-prone.

Communications data is also entering the age of automation with the development of the Battlefield Electronic CEOI System (BECS). BECS, under development by the

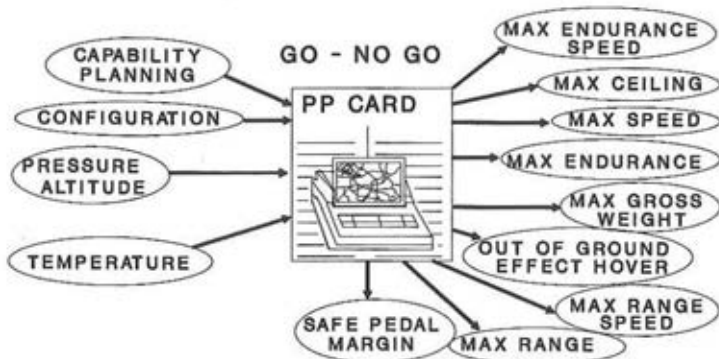


FIGURE 2. PERFORMANCE PLANNING

PM Single Channel Ground Air Radio (SINCGARS), will be capable of providing Communications Electronics Operating Instructions (CEOI) data to fielded units in various forms. AMPS will receive this data via floppy disk (or comm link) at brigade and battalion levels. Once resident within the AMPS, the CEOI can be utilized in the generation of the communication folder.

The third essential element is the data transfer device output. All the best planning could reap catastrophic results if the data is transferred to the aircraft incorrectly. The AMPS is currently being designed to support the data transfer devices for the MH-60K, MH-47E, CH-47D AWC, AH-64 ATHS/AI, AH-64C, OH-58D, UH-60A GPS, and the CH-47D GPS.

In addition to loading tactical data (i.e., waypoints, routes, communications, etc.), the AMPS will provide compressed digital map data in support of the MH-60K and MH-47E moving map display capability. The use of a data transfer device will not only reduce the time required to "boot-up" the aircraft to a matter of seconds, but will do it error-free. The AMPS will also provide hard copy printouts of kneeboard forms to be used by the flight crew as back-up and for quick reference in flight.

The AMPS development software will be programmed in ADA running in a UNIX environment. The windows operator interface, which provides graphic pull-down menus, is considered very user friendly for easy operation. The entire mission planning

process, as well as the on-screen graphics, is being developed in conjunction with the SOA and other user communities.

An aviation brigade, which provides support to corps and division, will contain an AMPS and an Army Command Control System (ACCS) PC within the Tactical Operations Center (TOC). The ACCS PC will provide the interface to the Army Tactical Command and Control System (ATCCS) Maneuver Control System (MCS) at division. All ATCCS related information will be funneled through the division MCS to the aviation brigade TOC. The AMPS will provide the brigade commander the information required to formulate the battle strategy. An aviation battalion, which provides support to brigade, will contain two AMPS within the TOC. One AMPS will be used to create "situation awareness" and will, therefore, require a real-time link to each Battlefield Functional Area (BFA) within the brigade ATCCS, not just the MCS. The information latency associated with MCS acting as a central node, although tolerable at the aviation brigade, is unacceptable at aviation battalion. The second AMPS at battalion will be used to actually plan missions by utilizing the "situation awareness" created by the first AMPS and the Operations Order provided by the brigade commander.

The 90s promise to be a decade that will enrich the battlefield with automation. This automation, in no small measure, will impact mission planning.

IIII

Whose Hand is on the Throttle?

By Brigadier General Clyde A. Hennies

Army Aviation is now a combat arms branch and a full partner in combined arms, joint operations. The nature of today's and tomorrow's battlefield requires an unprecedented level of individual proficiency and unit readiness.

To achieve these levels, Army Aviation units are flying increasingly tougher missions—nap-of-the-earth, multiship, night, and night vision goggle. There's no question that these high-risk missions test aircrews, equipment, and commanders as never before.

The most critical safety challenge for commanders is to intelligently manage the inherent risks involved. An area that requires a hard look is the pace of a unit's day-to-day and field operations.

From a safety standpoint, commanders have a natural tendency to take on more than they can handle. Many times they spend so much of their time and resources trying to be everything to everyone that



BG Hennies is Director, Army Safety, and CG, Army Safety Center, Ft. Rucker, AL.

it gets to the point that they're not being much to anyone. The boss is saying "We've got to do this, we've got to do that, we've got to do this," day in and day out. The result of all this is a unit that tries to do *everything*, but doesn't do *anything* well.

The commander has to be the guy with his hand on the unit's throttle. He must maintain a strong mission orientation in everything his unit does; he's the guy who has to say "We can or cannot do this, and here's why."

The common ingredient in mission-ready units *with good safety records* is that everyone knows the mission, they know what's required, and what the standards are. They use their resources to reach a level of proficiency that meets the tasks, conditions, and standards of the unit's Mission Essential Task List (METL). And they do it at a crawl-before-you-walk, walk-before-you-run pace. As sustained training



increases unit proficiency and the margin for safety, the training plan is expanded to include tougher missions. What this produces is a unit that doesn't take on more than it can handle, and, what it does, it does well.

This is not a way of getting around doing the tough missions. It's a way of getting the tough missions done with the greatest margin for safety.

A lot of units spend an inordinate amount of time doing missions that contribute nothing to the METL of the unit. This can lead to a poorly conceived and executed individual training program in which new people rarely have a chance to train to standards. And when these units have to do the METL-type missions, they find they haven't allocated enough training time—and that's where a lot of risk comes in.

This gets back to controlling the pace of

the unit. An aviation commander's top priority should be individual aviator training and proficiency. If the commander doesn't have a good solid individual aviation training program that takes the unit up to a certain proficiency level, effective collective training will suffer and together they put the unit at a high risk.

Because the Army is inherently a hard-charging organization, pace is critical to safe operations. And pace is the commander's responsibility. These days we have smaller organizations to do bigger, tougher missions; our units are leaner, and in many cases, they're not filled to their authorized level. As a result, sound planning and control of pace are more important.

The hand on the throttle controls the pace. In aviation units, that hand must be the commander's. ■■■■

OH-58D Kiowa Warrior: An Update

By Colonel Ted D. Cordrey

The OH-58D Scout helicopter has rapidly become one of the Army's most potent combat multipliers. Units are utilizing the aircraft in a variety of missions to include intelligence gathering, field artillery aerial observation, armed reconnaissance, and target designa-

tion for attack helicopters and close air support aircraft. Division commanders now have an aerial platform that can conduct effective night reconnaissance at significant stand-off ranges. Overall, the impact has been dramatic. Imagination seems to be the only limit to the employment of the OH-58D.

As good as it is, the focus of the program today is on making the OH-58D even better and more versatile. In January 1990, the Secretary of the Army formally approved a proposal to arm the aircraft with an air-to-ground weapons suite and to

field a multi-purpose light helicopter (MPLH) version of the system. The Secretary simultaneously selected Kiowa Warrior as



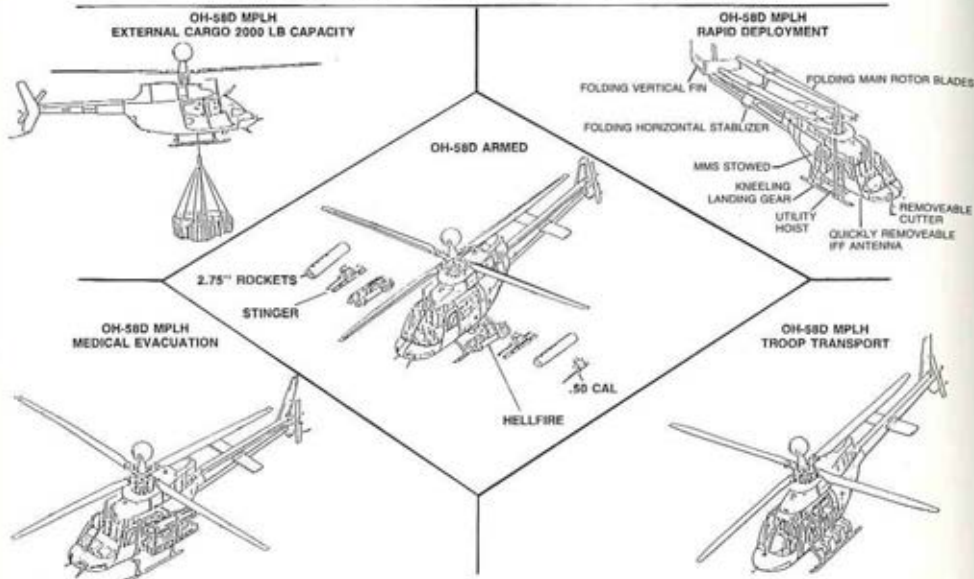
COL Cordrey is Training System Manager, OH-58D Helicopter, Ft. Rucker, AL.

the popular name for the upgraded OH-58D. Based on his analysis, the commander clearly has a great deal of flexibility when selecting the appropriate weapons mix or mission oriented kit for the task at hand.

Improvements

The first production armed aircraft is scheduled for delivery in mid-1991. The OH-58D aircraft currently fielded will return to Bell Helicopter in late 1991 at the rate of three to five airframes per month for retrofit to the armed/MPLH configuration. The Kiowa Warrior will incorporate a number of other improvements during the armed retrofit program. The ANVIS Display Symbology System (ADSS) will project critical flight symbology into the line of view of the crewmembers' night vision goggles to enhance safety. Planned improvements to the engine and transmission will sustain

OH-58D KIOWA WARRIOR MPLH



the agility and performance of the aircraft. Upgraded Aircraft Survivability Equipment (ASE) to include the AVR-2 laser warning device will be added to the airframe. A two-hour video record capability will be fielded. A requirement to provision the aircraft with a video downlink capability is being developed. SINCGARS radios will replace current communication systems. An integrated systems processor and data loader will reduce pilot workload. The cockpit display system and mast mounted sight processors will both be upgraded. The Kiowa Warrior has been designed to meet the fundamental warfighting capabilities of versatility, deployability, and lethality.

Crew Mix

The Aviation Center, in concert with Headquarters TRADOC and Department of the Army, is preparing Table of Organization

and Equipment (TOE) documentation that supports a two-pilot crew mix for the Kiowa Warrior. The two-pilot crew mix was approved in concept at the July 1990 Aviation Systems Program Review (ASPR). Force structure options that address this issue are currently being worked.

Joint Service Application

In recent months we have taken the opportunity to demonstrate the capabilities of the Kiowa Warrior to the Navy and Air Force. In August 1990 an OH-58D from Fort Sill, OK participated in an assessment by the Navy that focused on the ability of the Kiowa Warrior's sensor systems in a mine detection role (both sea and land roles). The next month, September, saw OH-58Ds from Fort Eustis and Fort Rucker demonstrate to senior Air Force leadership at Langley Air Force Base the utility of the aircraft in the Forward Air Controller (FAC)



**ARMY AVIATION:
A
QUALITY FORCE
FOR THE
FUTURE**

**AAAA ANNUAL CONVENTION
APRIL 10-14, 1991
CERVANTES CONVENTION CENTER
ST. LOUIS, MISSOURI**

■ ■ REGISTRATION & FEES:

An Advance Registration Form must be completed by each individual who wishes to register or attend social functions. This form may be reproduced locally if additional copies are required.

All persons attending the Professional Sessions, except spouses, must pay the fee for admission to the Professional Sessions. For those attendees who are non-members and wish to attend the Professional Sessions, there is an additional \$21.00 fee which includes a full-year AAAA membership. Admission to the Professional Sessions will be by Badge. Badges for admission to the Professional Sessions for the spouses of attendees are complimentary and the membership requirement for spouses of attendees is waived. AAAA members, non-members, guests, and their spouses who only wish to attend the exhibits or social functions need not pay the Professional Session or Membership fees. Admission to the Exhibit Hall is complimentary and will be by Badge.

Advance Registrations may be submitted to the AAAA National Office at any time prior to Friday, March 1, 1991, together with full payment for the functions the individual wishes to attend. Advance Registrations received after March 1 will be held for On Site Registration. Full refunds of function fees will be made if notification is received at the AAAA National Office by phone or mail on or before Friday, March 29.

For those members who sign up in advance for the Professional Sessions and pre-pay the fee, the AAAA will provide an attractive "take-home" convention souvenir.

Individuals may pick up their registration badges and function tickets at the AAAA Registration Center in the Cervantes Convention Center. Operational hours of the AAAA Registration Center are listed in the "SCHEDULE OF EVENTS".

■ ■ DOD APPROVAL:

"On reviewing the Army Aviation Association of America, Inc.'s plans for their 1991 Annual Convention, the Assistant Secretary of Defense (Public Affairs) finds this event meets the standards for participation by DoD personnel under DoD instruction 5410.20 and DoD Standards of Conduct Directive 5500.7. This finding does not constitute DoD endorsement of attendance, which must be determined by each DoD component."

■ ■ HOUSING:

The AAAA National Office has reserved room blocks at three hotels at AAAA Convention Rates. Room requests will be processed on a first-come, first-served basis starting on January 15, 1991. The Housing Deadline is Friday, March 1. Room requests received after Friday, March 1, will be honored on a space-available basis.

SUBMISSION OF THE ADVANCE REGISTRATION FORM IS REQUIRED TO RESERVE HOTEL ACCOMMODATIONS AT AAAA CONVENTION RATES.

The AAAA National Office is serving as the Housing Bureau ONLY for Military/DAC rated rooms. Military/DAC fees and room rates apply only to Active Army and DAC personnel and to those Reserve Component and Retired persons who are NOT in the current employ of defense contractors on a full-time, part-time, or consulting basis. DO NOT RETURN THE AAAA OFFICIAL HOUSING REQUEST FORM TO THE AAAA NATIONAL OFFICE UNLESS YOU ARE ELIGIBLE FOR THE MILITARY/DAC ROOM RATE. If you are eligible for the Industry/Civilian rate, send this form directly to the hotel of your choice. The hotels will ONLY accept direct reservations at AAAA Industry/Civilian rates.

PLEASE NOTE: Limited space is available at the hotels listed on the Official Housing Form. Indicate your hotel choices in order of preference: (1)—1st Choice to (3)—Last Choice. Your Housing Request will not be processed unless your preferences are clearly indicated on the Housing Form.

■ ■ AIR FARE SAVINGS:

TWA has been selected as the official carrier for the AAAA Annual Convention and will offer significantly reduced fares for travel to the Convention. Certain restrictions apply. For reservations or more information, call TWA at (800) 325-4933 (Cite File #CV10314) or the AAAA's official travel agent, Westport Travel at (800) 243-3335 TOLL FREE (in Connecticut, (800) 433-7183). The savings apply to reservations for TWA flights between Sunday, April 7, and Wednesday, April 17. Please consider using TWA and Westport Travel to make your travel arrangements for the AAAA Annual Convention.

■ ■ RENT-A-CAR SAVINGS:

Through the AAAA contract with HERTZ — CDP-1D #83438, AAAA card-holding members attending the AAAA Convention may obtain the HERTZ special convention rates on reservations made personally, or through travel agencies or corporate travel departments.

Call Westport Travel at (800) 243-3335 Toll Free (in Connecticut, (800) 433-7183) or call Hertz directly. The HERTZ toll-free number is (800) 654-2240. Cite Hertz Meeting Account Number 8287 when making reservations.

■ ■ BUS SHUTTLE:

A Shuttle Bus Schedule will be provided to AAAA Convention attendees approximately two weeks prior to the AAAA Convention.

■ ■ DRESS CODE:

The AAAA expects the following attire: Wednesday, April 10: Casual Attire. Thursday, April 11: Class B/Coat & Tie — Daytime; Casual Attire — Chapter Receptions. Friday, April 12: Class B/Coat & Tie — Daytime; Coat & Tie — President's Reception. Saturday, April 13: Class B/Coat & Tie — Daytime; Dress Mess/Dress Blues/Black Tie — Awards Banquet. Sunday, April 14: Casual Attire.

■ ■ PROFESSIONAL SESSIONS:

The Professional Sessions taking place on Thursday, April 11, through Saturday, April 13, at the Cervantes Convention Center, will be of special interest to all AAAA members, and are being arranged by Major General Rudolf Ostovich, III, Aviation Branch Chief and Commanding General of the U.S. Army Aviation Center and School, Ft. Rucker, Alabama, who serves as the Presentations Committee Chairman. The Professional Sessions — all under the theme of "Army Aviation: A Quality Force for the Future" — will officially commence at 8:00 a.m. on April 11. Admission will be by Badge.

■ ■ EXHIBIT HALL DISPLAYS:

The Exhibit Hall Displays have become one of the most important segments of the AAAA Annual Convention — complementing the Professional Sessions with exhibits of Army Aviation products and services and opportunities to exchange vital information first-hand with the representatives of defense-related manufacturers. The Exhibit Hall Displays will be held in the Cervantes Convention Center. Refreshments will be provided on a cash basis during all open hours. The hours of operation appear in the "SCHEDULE OF EVENTS".



1991 AAAA ANNUAL CONVENTION

ADVANCE REGISTRATION FORM

Cervantes Convention Center, St. Louis, Missouri • April 10-14, 1991



I plan to attend the 1991 AAAA ANNUAL CONVENTION. The Advance Registration Deadline is **FRIDAY, MARCH 1, 1991**. Advance Registrations received after March 1 will be held for On Site Registration. I understand that I may receive a full refund of my function fees if requested by phone call to the AAAA on or before **FRIDAY, MARCH 29, 1991**, or by written notification to AAAA that is received not later than **FRIDAY, MARCH 29**. Please print all information. **NOTE: Military fees apply only to Active Army and DAC personnel and to those Reserve Component and retired AAAA members who are not in the current employ of defense contractors or suppliers on a full-time, part-time, or consulting basis. Please make checks payable to AAAA.**

KEY: _____ THIS BOX FOR OFFICE USE ONLY _____

_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|

RANK/GS GRADE NAME (FIRST, MI, LAST)
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HOME MAILING ADDRESS OR NAME OF COMPANY, FIRM OR UNIT
 _____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|

STREET ADDRESS OR P.O. BOX NUMBER
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CITY _____ STATE _____ ZIP _____

COUNTRY _____ AREA CODE _____ OFFICE TELEPHONE NUMBER _____ SOCIAL SECURITY NUMBER _____

NICKNAME FOR BADGE _____ SPOUSE'S NAME, IF ATTENDING _____

UNIT/FIRM NAME FOR BADGE _____

CITY/STATE FOR BADGE _____

IS YOUR FIRM OR UNIT EXHIBITING? YES NO ARE YOU A CHAPTER DELEGATE? YES NO

SPECIFIC FUNCTION HELD AT THE 1991 AAAA ANNUAL CONVENTION

NOTE—The AAAA Professional Program begins at 8:00 a.m. on April 11, 1991.

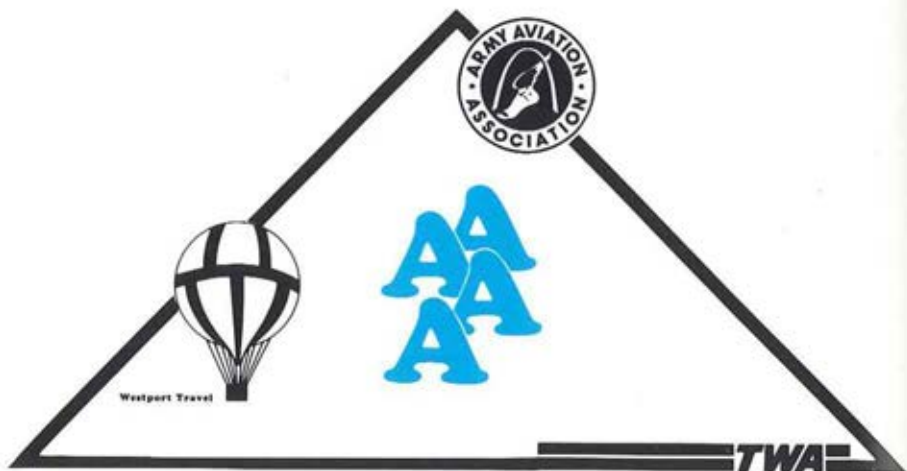
	MILITARY/DAC MEMBER OR SPOUSE	INDUSTRY/CIVILIAN MEMBER OR SPOUSE	ITEM LINE TOTAL	OFFICE USE
1 BADGE FOR PROFESSIONAL SESSIONS	<input type="checkbox"/> \$10	<input type="checkbox"/> \$50	\$ _____	_____
2 MEMBERSHIP FEE FOR NON-AAAA MEMBERS	<input type="checkbox"/> \$21	<input type="checkbox"/> \$21	\$ _____	_____
3 AAAA EARLY BIRDS RECEPTION, Wednesday, April 10	<input type="checkbox"/> \$3 ea.	<input type="checkbox"/> \$3 ea.	\$ _____	1 _____
AAAA MEMBERSHIP LUNCHEON, Tuesday, April 11	<input type="checkbox"/> at \$10 ea.	<input type="checkbox"/> at \$17 ea.	\$ _____	2 _____
SPOUSE TEA, Thursday, April 11	<input type="checkbox"/> at \$15 ea.	<input type="checkbox"/> at \$15 ea.	\$ _____	3 _____
SPOUSE BREAKFAST & "MAKEOVER" PRESENTATION, Friday, April 12	<input type="checkbox"/> at \$14 ea.	<input type="checkbox"/> at \$14 ea.	\$ _____	4 _____
AAAA AWARDS LUNCHEON, Friday, April 12	<input type="checkbox"/> at \$11 ea.	<input type="checkbox"/> at \$18 ea.	\$ _____	5 _____
AAAA PRESIDENT'S RECEPTION, Friday, April 12	<input type="checkbox"/> at \$14 ea.	<input type="checkbox"/> at \$22 ea.	\$ _____	6 _____
FOREST PARK/PLAZA FRONTENDAC TOUR (LUNCH ON YOUR OWN) Saturday, April 13	<input type="checkbox"/> at \$11 ea.	<input type="checkbox"/> at \$11 ea.	\$ _____	8 _____
AAAA EXHIBIT HALL LUNCHEON, Saturday, April 13	<input type="checkbox"/> at \$10 ea.	<input type="checkbox"/> at \$17 ea.	\$ _____	9 _____
AAAA AWARDS RECEPTION & BANQUET, Saturday, April 13	<input type="checkbox"/> at \$30 ea.	<input type="checkbox"/> at \$60 ea.	\$ _____	10 _____
BANQUET SEATING REQUEST _____				
AAAA AVIATION BRUNCH, Sunday, April 14	<input type="checkbox"/> at \$11 ea.	<input type="checkbox"/> at \$16 ea.	\$ _____	11 _____
CIRCLE METHOD OF PAYMENT: MasterCard VISA American Express Diner's Club Personal Check Business Check		TOTAL	\$ _____	_____

CREDIT CARD NUMBER _____ EXPIRATION DATE _____

CARDHOLDER NAME AND SIGNATURE _____

1 Spouse Badge for Professional Sessions is complimentary. 2 AAAA Membership is required for all attendees, except spouses, who wish to attend the Professional Sessions. 3 Admission fee waived for all active AAAA Lindbergh Chapter members and their spouses. 4 Reserved Seating: Formal/Black Tie; Military Blues/Mess jacket. Seating requests cannot be guaranteed.

This form, with the appropriate fees, must be completed and received by: AAAA, 49 Richmondville Avenue, Westport, CT 06880-2000 on or before **FRIDAY, MARCH 1, 1991**. Phone: (203) 226-8184; Fax: (203) 222-9863 Note: Forms received without payment will not be processed.



**DON'T GET SHUT-OUT
OF THE 1991 ST. LOUIS
AAAA CONVENTION — APRIL 10-14**

TWA has been selected as the designated carrier for the AAAA Annual Convention in St. Louis.

The reduced fares to and from St. Louis will be 40% off Coach Class or 5% off the lowest Super Saver. These apply to advance purchase requirements of the applicable fare.

To make your seat reservations (\$100,000 free insurance, convention mileage, seat assignments, boarding passes), call **Westport Travel**, our official agency or call **TWA** directly.

WESTPORT TRAVEL 1-800-243-3335
(in CT, 1-800-433-7183)

— OR —

TWA 1-800-325-4933
(Cite File #CV10314)

The savings apply to reservations on TWA flights between
Sunday April 7 and Wednesday, April 17, 1991.

AAAA, 49 RICHMONDVILLE AVENUE, WESTPORT, CT 06880-2000. TEL: (203) 228-8184 — FAX: (203) 222-9863



AAAA OFFICIAL HOUSING FORM
AAAA ANNUAL CONVENTION
APRIL 10-14, 1991 • ST. LOUIS, MO

MAIL THIS OFFICIAL HOUSING FORM TO:

IF MILITARY/DAC — Mail or FAX this form to the AAAA National Office, 49 Richmondville Avenue, Westport, CT 06880. FAX: (203) 222-9863.
 IF INDUSTRY/CIVILIAN — Mail this form directly to the hotel of your choice — See address below.

Please print all information. I understand that to receive a room at AAAA Convention rates, I must register for the professional sessions or exhibits or attend one of the functions of the AAAA Annual Convention. Room requests will be processed on a first come, first-served basis starting on January 15, 1991. The Housing Deadline is Friday, March 1. Room requests received after FRIDAY, MARCH 1, will be honored on a space-available basis. Please confirm your special needs directly with the hotel to which you have been assigned. If you have any questions, please contact the AAAA National Office at (203) 226-8184. NOTE: For Military/DAC Housing, this Housing Form will NOT be processed by the AAAA National Office unless accompanied by an AAAA Registration Form.

RANK/GS GRADE		NAME (FIRST, MI, LAST)	
HOME MAILING ADDRESS OR NAME OF COMPANY, FIRM OR UNIT			
STREET ADDRESS OR P.O. BOX NUMBER			
CITY			STATE
COUNTRY			ZIP
AREA CODE		OFFICE TELEPHONE NUMBER	

1 ARRIVAL DATE _____ ARRIVAL TIME _____ NO. NIGHTS _____ DEPARTURE DATE _____

<p style="text-align: center;">INDUSTRY/CIVILIAN ↓</p> <p>Select the hotels of your choice in order of preference. If a room at the hotel of your choice is not available, this form will be forwarded to the hotel that is your next available choice.</p> <p>If you work for a Defense Contractor on a full-time, part-time, or consulting basis, you are NOT eligible for the Military/DAC rate even if you are Retired Military.</p> <p>Mail this form directly to the hotel of your choice — see address below.</p> <p><input type="checkbox"/> *Adam's Mark \$103-Single; \$116-Double 4th & Chestnut Streets, St. Louis, MO 63102 Tele—(314) 241-7400</p> <p><input type="checkbox"/> *Marriott Pavilion \$80-Single; \$90-Double One Broadway, St. Louis, MO 63102 Tele—(314) 421-1776</p> <p><input type="checkbox"/> Holiday Inn at Convention Center \$68-Single or Double 811 North 9th Street, St. Louis, MO 63101 Tele—(314) 421-4000</p> <p>Above Rates Subject to Local Taxes.</p>	<p style="text-align: center;">MILITARY/DAC ↓</p> <p>Select the hotels of your choice in order of preference. If a room at the hotel of your choice is not available, a room will be reserved at the next available choice. NO request will be processed without three choices indicated. The Military/DAC room rate applies only to Active Army and DAC personnel and to the Reserve Component and Retired persons who are not in the current employ of defense contractors on a full-time, part-time, or consulting basis. Mail this form to AAAA, 49 Richmondville Avenue, Westport, CT 06880 if you are eligible for the Military/DAC rate.</p> <p><input type="checkbox"/> *Adam's Mark \$55-Single; \$65-Double c/o AAAA, 49 Richmondville Avenue, Westport, CT 06880</p> <p><input type="checkbox"/> *Marriott Pavilion \$55-Single; \$60-Double c/o AAAA, 49 Richmondville Avenue, Westport, CT 06880</p> <p><input type="checkbox"/> Holiday Inn at Convention Center \$49-Single or Double c/o AAAA, 49 Richmondville Avenue, Westport, CT 06880</p> <p>Above Rates Subject to Local Taxes.</p>
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2 PLEASE CHECK ONE BOX: Single Occupancy Double Occupancy Other: # _____

3 PRINT OR TYPE THE NAMES OF ALL PERSONS SHARING YOUR ROOM EXCLUDING YOURSELF:
 1. _____ 2. _____ 3. _____

4 PLEASE GUARANTEE MY RESERVATION WITH THE FOLLOWING CREDIT CARD:
 Mastercard VISA American Express Diner's Club Other (Specify) _____
 Credit Card Number _____ Expiration Date _____

5 PLEASE GUARANTEE MY RESERVATION WITH THE ENCLOSED CHECK EQUAL TO ONE NIGHT'S STAY

NOTE: The AAAA Convention Hotels noted with an asterisk (), require that a first night's deposit be submitted with the reservation. If your room is held by a credit card guarantee, your credit card may be charged at the time the guarantee is made. If your reservation is not guaranteed, the hotel will not guarantee that your reservation will be held.)

Have you made your airline reservation?

Call TWA at 1-800-325-4933 (Cite: File # CV10314) or call Westport Travel at 1-800-243-3335 for the AAAA Group Savings!

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At the 1991
AAAA Annual Convention
April 10-14, St. Louis, Missouri



Two winners have teamed up
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Through the AAAA contract with Hertz —
CDP-ID-83438 — any card holding members of
AAAA may obtain the Hertz special convention rates
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Discounts are on reservations made personally,
through Westport Travel (800) 243-3335
(in Connecticut — (800) 433-7183).
Or call Hertz Meeting Sales Desk at (800) 654-2240.

Be sure to mention Meeting Account #8287
when making reservations.

■■ SPOUSE PROGRAMS:

The AAAA invites spouses to participate in a program of planned activities from Thursday, April 11, through Saturday, April 13.

On **THURSDAY**, spouses are invited to an afternoon tea at 2:00 p.m. at the Adam's Mark Hotel and to listen to Jean Streeter, the Charles A. Lindbergh Archivist at the Missouri Historical Society who will present, "Charles A. Lindbergh: The Man & the Hero." Then, attendees will have an opportunity to view "Fashions of the Past", a fashion show featuring original vintage clothing and accessories from the 1800's to the 1940's.

On **FRIDAY**, the traditional Spouses Breakfast to honor the wives of the Awardees will be held at the Adam's Mark Hotel at 8:30 a.m. At 9:30, Joanne Banks, Key Coordinator with Shaklee Corporation will present "Smart Choices for Today's Woman", a presentation geared to the military lifestyle on how to apply makeup, color blending, hair styling, good nutrition and wardrobe selection to help you look your best.

FRIDAY afternoon, will be free for individual exploration. Information on St. Louis points of interest will be available at the AAAA Registration Center. Also, on **FRIDAY** afternoon, the AAAA will sponsor a free professional program, "Career Alternatives for Women" featuring a panel of military wives discussing their career choices and the challenges they have faced.

On **SATURDAY**, spouses are invited to tour St. Louis' famed Forest Park and Plaza Frontenac, a shopping paradise. Buses will depart from the Cervantes Convention Center at 9:00 a.m. The tour will begin with the Jefferson Museum, which houses the Missouri Historical Society including the Charles A. Lindbergh exhibit; then, a narrated ride through the area's West County will precede your shopping experience at Plaza Frontenac. Stroll, shop and lunch at your leisure. Buses will return by 3:00 p.m.

■■ AAAA CHAPTER RECEPTIONS:

The Thursday, Friday and Saturday evening AAAA Chapter Receptions are a MOST IMPORTANT AND UNIQUE PART of every AAAA Annual Convention. Chapters do their utmost nightly to top one another in providing their own brand of hospitality, entertainment, food, and beverages — for all AAAA Convention attendees. The Chapter Receptions will be held at the Adam's Mark Hotel. Bus transportation will be provided from each of the "AAAA" hotels listed on the Housing Form.

■■ AAAA "7/11 SHOOTOUT" RACQUETBALL TOURNAMENT:

The AAAA Lindbergh Chapter is sponsoring a "7/11 SHOOTOUT" Racquetball Tournament on Wednesday, April 10. Space will be allocated on a first-come, first-served basis. Contact David P. Heberer or Michael F. McClellan at (314) 427-6707.

■■ AAAA GOLF TOURNAMENT:

The AAAA Lindbergh Chapter is sponsoring a Golf Tournament on Wednesday, April 10. Space is limited and will be allocated on a first-come, first-served basis. Contact Michael T. McFalls at (314) 263-1333.

■■ AAAA EARLY BIRDS RECEPTION:

The Early Birds Reception will be held on Wednesday evening, April 10, at the Cervantes Convention Center. Cash Bar. Hotdogs, popcorn, and snacks available on a cash basis. Live band. The Admission Fee is waived for all active AAAA Lindbergh Chapter members and their spouses.

■■ AAAA MEMBERSHIP LUNCHEON:

The AAAA Membership Luncheon will be held on Thursday, April 11, at the Cervantes Convention Center during which the

AAAA will honor its "Top Chapter" and the winners of AAAA Membership Contests. All seats at this luncheon are unreserved.

■■ AAAA AWARDS LUNCHEON:

The AAAA Awards Luncheon will be held at the Cervantes Convention Center on Friday, April 12. Senior Army representatives will present the AAAA's national individual awards. All seats at this luncheon are unreserved.

■■ THE PRESIDENT'S RECEPTION:

On Friday evening, April 12, the President's Reception will take place at the Adam's Mark Hotel. Bus transportation will be provided from each of the "AAAA" hotels. The AAAA National President, Brigadier General James M. Hesson, Ret., and Mrs. Hesson; the President-Elect, Major General Charles F. Drenz, Ret., and Mrs. Drenz; the AAAA Executive Director, Terrence M. Coakley and Mrs. Coakley; the Chief of the Aviation Branch and AAAA Presentations Chairman, Major General Rudolph Ostovich, III and Mrs. Ostovich; and the Commanding General of the U.S. Army Aviation Systems Command and the AAAA Military Affairs Chairman and Host, Major General Donald R. Williamson and Mrs. Williamson, are expected to form the Receiving Line.

■■ AAAA EXHIBIT HALL LUNCHEON:

An informal luncheon will be held on Saturday, April 13, at the Cervantes Convention Center, after which AAAA's traditional Chapter Photos will be taken. All seats at this luncheon are unreserved.

■■ AAAA AWARDS RECEPTION AND BANQUET:

The AAAA's Awards Reception and Banquet will be held on Saturday, April 13, at the Adam's Mark Hotel. Senior Army representatives will present the AAAA's national unit awards.

Seating at this formal Banquet is reserved. Please note any special seating requests on the Advance Registration Form. Every attempt will be made to comply with your request. Your table number will appear on your Banquet ticket. We ask that you sit at the table where you have been assigned in consideration of the other attendees.

Military and government dignitaries and AAAA senior military members and their spouses are invited as Banquet guests by the AAAA National Office in accordance with the invitation policies established by the AAAA National Executive Board and DoD provisions. Invitations are non-transferable.

Invited guests are seated in random fashion at tables purchased by AAAA Industry Member firms to foster interchange between government and industry.

Invitations are extended to (1) all Active Army O-5 Members and above, (2) all Active Army GS-15 Members and above to include members of the Senior Executive Service, (3) all Active Army E-9 Members, and (4) Active Army O-4 Members, Active Army CW4 and MW4 Members, and Active Army E-8 Members from the Regional area in which the Annual Convention is held.

Banquet acceptances must be received by March 1. If you are eligible to be a Banquet guest and have not received an invitation by February 1, please contact the AAAA National Office.

■■ AAAA CHAMPAGNE GET-AWAY & AVIATION BRUNCH:

On Sunday morning, April 14, the AAAA invites AAAA Convention attendees to join the AAAA President in a Champagne Toast in the AAAA President's Suite at the Adam's Mark Hotel.

The Aviation Brunch, which is held simultaneously, offers AAAA attendees to say their goodbyes until the next AAAA Convention, April 8-12, 1992, in Atlanta, GA.

AAAA 1991 ANNUAL CONVENTION SCHEDULE OF EVENTS

"ARMY AVIATION: A QUALITY FORCE FOR THE FUTURE"

MONDAY, APRIL 8, 1991

1200-1700 Registration & Ticket Sales

TUESDAY, APRIL 9, 1991

0800-1700 Registration & Ticket Sales

WEDNESDAY, APRIL 10, 1991

0800-2100 Registration & Ticket Sales
 0730-1230 AAAA Lindbergh Chapter Golf Tournament
 0800-1700 AAAA Lindbergh Chapter Racquetball Tournament
 1000-1700 Press Room Open (Sponsored by GE Aircraft Engines, Lynn, MA)
 1130-1300 AAAA National Executive Board Luncheon
 1230-1700 AAAA Lindbergh Chapter Golf Tournament
 1300-1630 AAAA National Executive Board Meeting
 1800-2030 Grand Opening of Exhibits
 2030-2300 AAAA Early Birds Reception

THURSDAY, APRIL 11, 1991

0700-1830 Registration & Ticket Sales
 0700-0800 Speakers & Panelists Breakfast
 0730-1700 Press Room Open (Sponsored by GE Aircraft Engines, Lynn, MA)
 0800-1000 Opening Professional Session
 0800-0820 Welcome by AAAA President
 0820-0850 Opening Address
 0850-0930 Aviation Branch Chief's Update
 0930-1000 AISCOM Update
 1000-1800 Exhibit Hall Displays Open
 1000-1100 Exhibit Hall Refreshment Break
 1000-1100 Chapter Presidents' & Secretaries Session
 1100-1600 PERSCOM Career Guidance
 1100-1200 AAAA Membership Reception
 1200-1330 AAAA Membership Luncheon
 1330-1430 Exhibit Hall Refreshment Break
 1400-1600 Spouse Tea at Adam's Mark
 1400-1700 AAAA Scholarship Board of Governors Meeting
 1430-1630 Afternoon Professional Session
 1430-1450 Aviation Commissioned Officer Update
 1450-1510 Aviation Warrant Officer Update
 1510-1530 Aviation Enlisted Update
 1530-1550 Safety Update
 1550-1610 Army Aviation at the NTC
 1610-1630 Army Aviation at the JTC
 1630-1800 Exhibit Hall Refreshment Break
 2100-0100 AAAA Chapter Receptions

FRIDAY, APRIL 12, 1991

0700-1730 Registration & Ticket Sales
 0700-0800 Speakers & Panelists Breakfast
 0730-1700 Press Room Open (Sponsored by GE Aircraft Engines, Lynn, MA)
 0800-1000 Morning Professional Session
 0800-0845 Army Aviation in Europe
 0845-0930 Army Aviation in SOUTHCOM
 0930-1000 Army Aviation in Special Operations

FRIDAY, APRIL 12, 1991 — CONTINUED

1000-1100 Special Focus Sessions
 1000-1100 Aviation Company Grade Officer Program
 1000-1100 Aviation Warrant Officer Program
 1000-1100 Aviation Enlisted Program
 0830-1100 Spouse Breakfast in Honor of the Aviator Wives & "Maleover" Presentation
 1000-1700 Exhibit Hall Displays Open
 1000-1100 Exhibit Hall Refreshment Break
 1100-1700 PERSCOM Career Guidance
 1100-1200 Awards Luncheon Reception
 1200-1400 AAAA Awards Luncheon
 1400-1430 Exhibit Hall Refreshment Break
 1430-1630 Career Alternatives Spouse Professional Program
 1430-1630 Afternoon Professional Session
 1430-1515 Army Aviation in Korea
 1515-1600 Army Aviation in PERSCOM
 1600-1630 DESERT SHIELD
 1630-1700 Exhibit Hall Refreshment Break
 1830-2030 Registration and Ticket Sales
 1900-2030 AAAA President's Reception
 2100-0100 AAAA Chapter Receptions

SATURDAY, APRIL 13, 1991

0700-1700 Registration & Ticket Sales
 0700-0800 First Light Breakfast (By Invitation)
 0800-0930 Morning Professional Session
 0800-0900 AISCOM DESERT SHIELD Update
 0900-0930 AISCOM Fielded Aviation Systems Update
 0900-1500 Forest Park/Plaza Frontarea Spouse Shopping Tour
 0930-1630 Exhibit Hall Displays Open
 0930-1000 Exhibit Hall Refreshment Break
 1000-1600 PERSCOM Career Guidance
 1000-1200 Morning Professional Session-Cont.
 LH Update
 1000-1025 Aviation PED Update
 1050-1100 OH58D Kiowa Warrior
 1100-1110 Apache
 1110-1120 SOA
 1120-1130 Longbow
 1130-1140 Black Hawk
 1140-1150 Q1-47
 1150-1200 ASE/EW Update
 1200-1330 AAAA Exhibit Hall Luncheon
 1330-1600 Exhibit Hall Social/Chapter Photos
 1730-1930 Registration & Ticket Sales
 1800-1900 Awards Banquet Reception
 1900-2200 AAAA Awards Banquet
 2200-0130 AAAA Chapter Receptions

SUNDAY, APRIL 14, 1991

0830-0930 AAAA National Executive Board Meeting
 0930-1030 Champagne Get-Away
 0930-1200 Aviation Brunch

PLAN NOW FOR 1992!
April 8-12
Atlanta, Georgia



mission profile. Both demonstrations went extremely well. It is also expected that in the coming year the OH-58D will be closely scrutinized as a potential player in the war on drugs.

Fieldings

The current Kiowa Warrior Distribution Plan is reflected on the accompanying chart. The Plan is periodically revised to ensure these scarce assets are placed in the force at the right place and in the right numbers. Implementation begins in late FY91 and will continue for a number of years until completed. The prognosis for additional procurements looks pretty good as this article goes to print.

Our goal with the Kiowa Warrior Program is to field a product that will have a positive impact on the warfighting capabilities of our Army. Feedback from the users tells us we have done that with the basic aircraft. The lessons learned and experiences we are gaining today will serve as a springboard for the introduction of the Kiowa Warrior in the Army structure. I look forward to providing you with future status reports. ■■■■

LOCATION	UNIT	QUANTITY
TRADOC AMC	Training	20
	Test	3
	Float	2
EUSA FORSCOM	21D	25
	2-229 ATKHB	10
	82 ABN DIV	50
	XVIII Corps	33
USAREUR	VII Corps	15
	31D	16
	3AD	16
	2ACR	25
	11ACR	25

Combat Developments

By Colonel Theodore T. Sendak

As you read in the August/September issue of ARMY AVIATION MAGAZINE, MG Ostovich, Commanding General of the Army Aviation Center and Fort Rucker, outlined the results of the July 1990 Aviation Systems Program Review (ASPR). As with

any decisions, it is the follow-up that brings them to fruition. That follow-up falls squarely on our shoulders at Fort Rucker, and this article is to provide you with the plan and status of implementation.

The Vice Chief of Staff of the Army (VCSA) directed numerous actions on key aviation issues. The Department of the Army in turn tasked all of the key ASPR participating agencies to work toward a VCSA review in the August-September 1991 time frame. A General Officer's Steering Committee (GOSC), chaired by MG Ostovich, and a Council of Colonels (COC), chaired by the author, are established and will review the status and give guidance on ASPR issues. I plan to convene the COC



COL Sendak is Director of Combat Developments, USAAVNC, Ft. Rucker, AL.

quarterly beginning on 2 November 1990. The GOSC will meet semiannually.

Force Structure

The key to most of the aviation issues at the ASPR was force structure of aviation units. So, as you would expect, our priorities are going toward the task to conduct a study called Aviation Requirements for the Combat Structure of the Army — Number 5 (ARCSA-V). The Combined Arms Center (CAC) at Fort Leavenworth will sponsor the study with COL Robert Hurley serving as study chief.

ARCSA-V will develop aviation force structure in concert with AirLand Battle—Future Doctrine, focusing on the years 1995-2000. In the first of two phases, CAC will define the roles, missions, functions, and size of Army's future aviation force. The second phase will take place at Fort Rucker to define Aviation's future mission

needs through force design, equipment requirements/capabilities, equipment availability, and future force structure.

Supporting Studies

The Directorate of Combat Developments (DCD) has several ongoing studies that will provide data for ARCSA-V. A Scout/Attack Mix Study, a Longbow/Apache Mix Study, and Utility Aircraft Requirements Study (UTARS) will all feed the process. The first effort is internal, while the UTARS and Longbow Apache Mix Study are joint DCD/LB&M Associates efforts.

All three studies will provide data in the May 1991 time frame. UTARS will determine the best modernization plan for the Army's utility helicopter fleet. The study will consider various non-developmental options in light of the closure of the UH-60 production line after 1,143 production aircraft (rather than procurement of the earlier objective of 2,253 aircraft) and an earlier decision not to develop a light utility aircraft as part of the LH program.

The UH-60 termination leaves the Army with a requirement for approximately 1,400 UH-1 aircraft (purchased between 1962 and 1976) to fill the void in air assault, medical evacuation, command and control, and liaison roles.

Units Without Equipment

One aspect of aviation force structure that has received particular interest is a reserve unit (Echo Company) without equipment, designed to provide attack battalions with the maintenance manpower and crew ratios to sustain wartime operations. A Council of Colonels hosted at Fort Rucker on 20 September 1990 arrived at the following Echo Company initiative:

- Convene a GOSC in November 1990.
- Office of the Chief of Army Reserves (OCAR) resource personnel and equipment to field two Echo Companies during FY 91.
- FORSCOM resource the required additional flying hours.
- Fort Leavenworth conduct the assessment;

- USAAVNC train additional reserve pilots and crewmembers.

- The Headquarters, Aeroscout, and Attack Platoons of Echo Company will operate as a separate attack company within the supported battalion. Maintenance and support personnel will augment the battalion headquarters and unit maintenance.

- Two Echo Companies will enter carrier status in January 1991. One company will form at Fort Hood; the other at Fort Bragg. Evaluation will begin the first quarter FY92.

- Echo Company will consist of 9 officers/21 warrant officers/98 enlisted for a total of 128 spaces (the TOE is complete and at HQDA awaiting approval).

- The VCSA will receive the final operational and organizational concept briefing in December 1990.

ASPR Integration

To integrate the force structure, materiel and logistics logs of the ASPR, the Army Aviation Modernization Plan (AAMP) is key. First, we must update the AAMP in 1990, and that should be complete by the end of November 1990.

We will update the objective plan for equipping Army Aviation with a modern, cost-effective, war-fighting fleet. The 1990 edition of the AAMP will address current constrained resources, reduced force structure, and doctrinal guidance from Headquarters, Department of Army. It draws upon the imperative espoused by the Army Chief of Staff along with the qualities of lethality, deployability, and versatility to keep Army Aviation an integral member of the joint and combined arms team. The 1991 "revision" of the Army Aviation Modernization Plan will then incorporate ARCSA-V and the ASPR decisions.

Bottom line is, we have a path laid out to define Army Aviation's role and structure by the Fall of 1991, as we continue to be "A Relevant Force for the Future." In the next DCD Update, I'll bring you the status of our logistics and materiel issues, both from the ASPR and DESERT SHIELD. ■■■■

The Apache Program: A Full Canoe

By Colonel Samuel L. DeLoach

The AH-64 Apache Program continues to successfully navigate the turbulent waters associated with any major program in today's atmosphere. The program can be accurately portrayed by four Indians in a canoe travelling down a river that varies from wild rapids

to calm waters. They represent the four major missions of the program: Readiness, Production, Development, and Foreign Military Sales.

Readiness

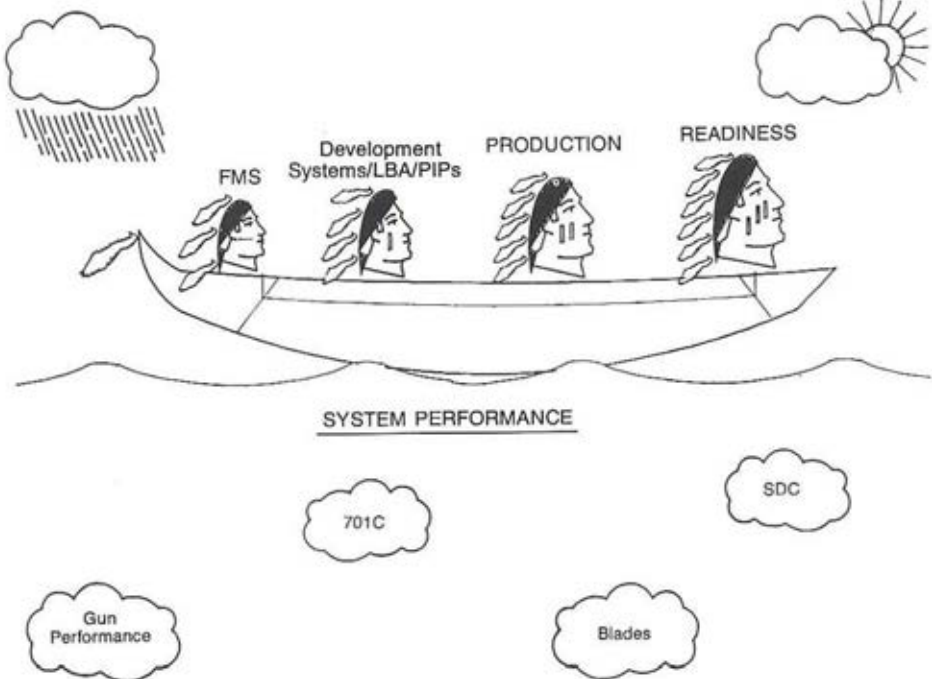
Many of the major obstacles affecting Apache readiness have been successfully addressed in the past year. The impact of the storms in Texas, South Carolina, and Germany have been largely overcome primarily due to Aviation Systems Command (AVSCOM) and the PM taking extraordinary steps to procure repair parts and repair the over 100 storm damaged aircraft. As of 1 November 1990, 108 storm damaged aircraft have been returned



COL DeLoach is Program Manager, Apache, St. Louis, MO.

to flyable status. The major reliability problems associated with the main rotor blades, tail rotor washplates, main rotor strap packs, shaft driven compressor, and the thirty millimeter (30mm) area weapon system have been redesigned and are being provided to the field. Additional test equipment has been provided to contractor representatives supporting Apache units and procurement actions are ongoing to provide the equipment to Apache battalions. The result of these efforts has been a steady rise in worldwide Apache readiness to 81 percent mission capable in September 1990.

The Apache has been performing extremely well during Operation DESERT SHIELD with readiness significantly exceeding worldwide rates and Army goals. The hardware has been exceeding expectations and it appears the aircraft was "made for the desert."



Production

Through 31 October 1990 the Army has accepted 623 aircraft. Contracts are in place with McDonnell Douglas Helicopter Company (MDHC) for the remainder of the 807 Apaches to be procured with a planned delivery of the final aircraft in September 1993. There are now 22 deployed combat ready Apache battalions. A total of 40 battalions are scheduled for deployment.

Development

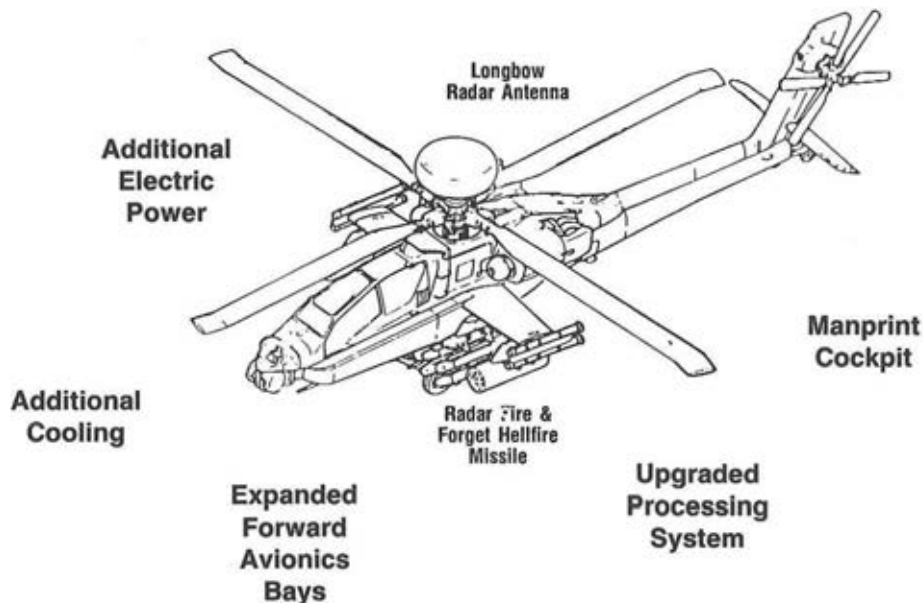
Progress continues on the two major enhancement programs although the waters have been and are turbulent.

- **AH-64B:** The concept for the AH-64B is a block modification of the high priority material changes that are within appropriated funding. The major upgrades include the Airborne Target Handover

System/Avionics Integration, Global Positioning System, an Optical Improvement Program to protect TADS/PNVIS hardware from threat laser damage, Laser Protective Visor systems, and growth provisions for future material changes. The Air-To-Air Stinger (ATAS) program was planned to be part of this major block upgrade; however, as of this writing, it appears that specific Congressional authorization language will prohibit ATAS incorporation until a later date. Fielding of the first AH-64B is currently planned for late 1992.

- **LONGBOW APACHE (LBA):** The most significant enhancement program incorporates a mast mounted Fire Control Radar (FCR) targeting assembly, radio frequency (RF) seekers for the Hellfire missiles, and those changes necessary to integrate the FCR and RF Hellfire on the aircraft. The aircraft modifications include additional electrical power, additional cooling, ex-

Longbow Apache



panded forward avionics bays, an upgraded processing system, and a Manpower Integration (MANPRINT) crew station. The program is scheduled to be presented to the Defense Acquisition Board in December 1990 and is currently reviewing schedule alternatives as a result of guidance received from the Conventional Systems Committee.

Foreign Military Sales (FMS)

Foreign government interest and confidence in the Apache continues to grow. FMS cases exist with the Government of Israel for 18 aircraft and Egypt for 24 aircraft. Activities in the Mid-East have helped increase the interest of the United Arab Emirates, Saudi Arabia, and Bahrain

as well as Israel possibly increasing their requirement. Strong interest has also been voiced by the Netherlands, United Kingdom, and Japan. The increased foreign interest and possible FMS sales can give us a working margin to prevent or mitigate any production line break prior to the LBA program.

Summary

We have a lot going on and the future looks good. Readiness continues to improve and production contracts are in place. The two enhancement programs continue to move forward, although in rough water. The enhancements will significantly improve what is already the world's best attack helicopter.

IIII

Planning Ahead for What Could Happen

By Colonel Robert J. Kreutzmann

As an Army Flight Surgeon and civilian aviator with considerable experience, I feel qualified to draw some important parallels between medicine and aviation with respect to safety.

In the practice of medicine, every patient is different,

provides important teaching points, yet generally follows a predictable course. However, an unexpected event, which if not immediately recognized and managed correctly, can rapidly end in a disaster.

In the same way, each flight mission is different, yields important teaching points, and if problems go unrecognized can rapidly progress to a catastrophic or life-threatening event...an accident. An important difference, however, is that aviation usually involves more than one victim.

Statistics show that human factors contribute to 80 percent of Army Aviation accidents. These accidents are usually caused by a combination of events, many which begin long before the flight departs. Had crews planned ahead for what could have happened, recognized the emergency

early, and rapidly taken actions to increase their options, the statistics would be much different.

Positive Measures

Positive measures must be taken to ensure that one has the optimum psychological capacity to conduct a safe and effective flight mission. Problems associated with family, work, finances, substance abuse, or fatigue are additive and consume the psychological reserve required to cope with the requirements of military aviation. If the aviator's mind is overloaded with such distractions, the chances for surprise, panic, constriction of thought, and an accident are increased in the event of an unsuspected in-flight problem.

Remember how easily your mind was task overloaded during those early days as a student pilot? A simple scan of the instru-

COL Kreutzmann is Commander, U.S. Army Aeromedical Center, Ft. Rucker, AL.

Safety does not happen by accident, but its lack causes accidents. Consider developing the following safety habits:

★ Continue to learn all you can, critique every mission you fly, and think safety. Experience and safety conscious thought processes can be exercised outside the cockpit.

★ Develop a professional climate to exchange information, experiences, and ideas. Let others learn from your experiences and mistakes. There should be a lot of "There I Was" or "What If" discussion in a unit.

★ Discuss the recognition and management of aviation mission emergencies. You will increase your chances of survival should you be faced with a similar problem sometime during your aviation career.

★ Minimize risks by planning ahead for what could happen, stay ahead of the aircraft, and always maximize your options.

ments, making a radio call, or a glance at an approach plate would easily affect your heading, altitude, or airspeed. Since you are now a seasoned aviator, I suspect you feel the problems of information overload are history. . . but are they?

During a post-accident check ride, I vividly recall a CW2 command pilot who was involved in an accident while making an approach to landing in loose snow. He related that the approach to landing was uneventful until blowing snow created a white out. Instead of using his instruments to fly out of the situation, he "bottomed the collective." Rearward and lateral movement caused a roll over and subsequent destruction of the aircraft. He commented that he didn't think of getting onto the instruments!

The truth was that he had never thought about using the instruments to get out of that kind of difficulty. His thinking was rapidly overwhelmed like that of a student pilot when first attempting to hover a helicopter. One would expect this outcome due to the urgency of the situation coupled with the pilot's lacking experience in dealing with this type of situation.

On his subsequent post-accident check ride, the evaluated aviator did every maneuver "by the numbers" with confidence and acceptable precision. Just as the standardization pilot was ready to call the ride successful and return to the airfield, I asked him to unplug the pilot's headset and suggested that he had not yet looked for the real problem. I asked that he simulate an unsuspected emergency in which the judgement and emergency actions of the pilot would appear critical to our survival.

Following more routine maneuvers and conversation, the standardization pilot simulated a governor problem and hydraulic failure. The younger aviator froze on the controls and might not have recovered had he been in charge.

Again, the younger aviator used the excuse that he had never been forced to deal with emergency procedures "out of sequence." His failure to plan for problems made him unable to cope due to brain

overload when confronted with what he thought was a true emergency.

Safety requires a knowledge of the aircraft, flight environment, mission profiles, flight experience and prior thought concerning all types of emergency situations. This is the only way pilots can stay ahead of the aircraft, recognize problems early, and take immediate corrective action to retain the greatest number of options in the event of unsuspected problems.

All too often safety programs are limited to superficial acts such as putting a colored dot on a wristwatch, displaying colorful posters, and filling out meaningless forms during preflight when the aviator should be thinking about the mission. Although such programs are "Be Safe" reminders, they don't build confidence and program the brain to plan ahead, monitor, and deal with unexpected in-flight situations.

Aviation safety must be a comprehensive, professional way of life. Professional aviators must constantly strive to build and maintain a large personal data base in order to plan for every eventuality, monitor the appropriate critical indicators during all phases of flight, and possess the confidence, judgement, and skill to react appropriately in the event of an untoward event. The tools required for this professional development include a thorough knowledge of the aircraft, frequent study of emergency procedures, appropriate practice, and in-depth self critique following every flight.

Knowledge of regulations, familiarity with emergency landing areas, a three-dimensional perspective of airspace for in-route flight and approaches, and utmost skills in military tactics are also critical to the conduct of a safe and effective mission. Aviation calls for the utmost judgement, leadership, and fortitude to decide when to abort a landing and inform passengers when it is unsafe to fly.

I challenge both commanders and their aviators to develop an open environment that promotes a safer profession through frank exchange of information and experiences. Have a safe and professional aviation career!

IIII

PERSONNEL:

NEW POSITIONS FOR AVN MWOs

BY MW4 WILLIAM D. SAUNDERS

ALEXANDRIA, VA — Some very good news was recently received from the Army Aviation Propensity Office at Fort Rucker concerning the authorization document (TOE/TDA) position coding for aviation Master Warrant Officers (MWO).

After two years of staffing, justifying, and documenting the utilization of aviation MWOs, a new plan to recode all active Army TOEs was approved by the Chief, U.S. Army Aviation Branch, MG Rudolph Ostovich, III, and sent to the U.S. Army Personnel Integration Command (USAPIC) for implementation.

Proposals for new rank coding in all TDA units was also made and sent to the Training and Doctrine Command (TRADOC). Why is this such welcome news? Let me explain.

Constraints

During the initial position coding effort in 1986, several management constraints were imposed that limited most aviation MWO positions to "one deep" safety officer slots in each aircraft specialty. Some positions were coded specifically for instructor pilots or maintenance officers, but not enough to properly distribute the vast experience of our growing population of aviation MWOs.

To make matters worse, many

of these positions were at company/troop level. The talent and experience of this carefully selected group was employed at levels not consistent with their career progression and occasionally in fields that did not match their background.

An example would be the UH-1 instructor pilot who, following completion of the MWO course, was sent to the Aviation Safety Officer Course enroute to his new position as a company

management, you say? You're right. But this is about to change.

The newly approved position coding authorizes three aviation MWOs on each aviation brigade staff as shown below.

Position

In addition, each Aviation Intermediate Maintenance (AVIM) Company will have one MWO position coded for a 153AG, Maintenance Officer (MTFE). Specialty code 153A is being used to indicate a rotary wing aviator, aircraft non-specific.

This will allow greater flexibility in selecting and assigning aviation MWOs by focusing on their skills as standardization, maintenance, or safety officers instead of aircraft qualification. Most are qualified in more than one type of aircraft anyway. If

MOS	DUTY POSITION	POSITION
153AB	Brigade Safety Officer	HHC
153AC/F	Operations/Training Officer (SIP)	S-3
153AG	Maintenance Officer (MTFE)	S-4

Safety Officer because that was what the TOE required. We then had an MWO with over 20 years of operations and training background filling a safety officer position for the first time in his career. Not very effective

specific aircraft skills are required by a particular command, the assignment requisition can be built with specific criteria in the trailer data.

There will also be a number of positions with MWOs in other specialties. They include mostly non-TOE units, staff agencies, and proponent offices that require specific aircraft system knowledge and experience.

The Results

These changes better align the
(MWOs cont. on p. 61)



MW4 Saunders is Chief, Aviation Branch, Warrant Officer Division, U.S. Army PERSONNEL INTEGRATION COMMAND, Alexandria, VA.

SAFETY:

ARNG CLASS A RATE: ZERO!

BY MAJOR RICHARD A. SHERMAN

A Word from COL Stanko

Many years ago as a junior major on the National Guard Bureau Staff, I was tasked to establish the objectives for the Army National Guard aircraft accident rate for fiscal year 67. The aircraft accident rate for the ARNG in the years prior to FY67, like the active Army's, ranged in the 20 to 40 accidents per 100,000 flying hours. With cavalier resolution, I submitted my recommendation: "Zero." Little did I anticipate the opposition to that recommendation. I was immediately lectured on "objectives." They must be reasonable, attainable, and measurable. I was advised to be logical. Why not just set the objective at half the FY66 rate? The escalating discussion became a contest of prerogative. Eventually, I stood before the Deputy Chief, National Guard Bureau, Major General Francis S. Greenleaf, with my heels locked.

"Major," he said, "they tell me you're hard to get along with."

"No sir, I just don't think you want to tell people it's all right to have accidents."

After a few moments of that particular kind of silence when Major Generals regard smart aleck Majors, Major General Greenleaf said, "You're right! The only acceptable accident rate is a zero rate!" We would use that statement over and over as we began our pursuit of a "Zero Aircraft Accident Rate." Twenty four years later (FY90), the Army National Guard did it. Four hundred and thirty seven thousand six hundred and ninety flying hours without a Class A accident.

I think that it is appropriate that our article in this issue be directed to Safety. The accompanying article is by the current custodian of our ARNG Aviation Safety Team, Safety Branch, Army Aviation Division, Major Richard A. Sherman, who is on tour from the Kentucky Army National Guard. He is a Master Army Aviator and has served in many assignments, both on active duty and with the Kentucky Army National Guard.

COL John J. Stanko, Ret.

Chief, ARNG Division,
National Guard Bureau,
Aberdeen Proving Ground, MD

ABERDEEN, MD — On 1 October 1990, the Army National Guard (ARNG) achieved a monumental milestone in its quest for a zero aviation accident rate. For FY 90 we lowered our Class A aviation accident rate to zero. How did this happen? Was it luck? Can we do it again? No, it isn't attributable to luck. We believe luck is the result of good design. It happened because we have a viable aviation safety program. The bedrock of our program is grounded in Total Quality Management. The people who make the safety program work are the aircrews, the ground support personnel, and the commanders.

The ARNG Aviation Safety Program is managed from the Aviation Division of the National Guard Bureau by a three member Aviation Safety Team. Communications and coordination are conducted through the State Army Aviation Officers (SAAO) and the Army Aviation Support Facility (AASF) Aviation Safety Officers (ASO) to the units and aviation soldiers. The SAAOs and the ASOs are the conduit for the program's success.

Time is the critical constraint on all Guard operations and cannot be wasted. Training and awareness programs must be well planned and time effi-

(ARNG — cont. on p. 62)



MAJ Sherman is a member of the ARNG Aviation Safety Team, Safety Branch, Army Aviation Division, National Guard Bureau.

TRAINING:

DES UPDATE

BY LIEUTENANT COLONEL CHRIS SIEVING

FORT RUCKER, AL — It is a real pleasure for me to have the opportunity to update you on some of the key issues that we were working on in the Directorate of Evaluation and Standardization. This new year has brought many challenges to our folks which I would like to discuss with you.

Battle Focus

The advent of FM25-101, Battle-Focused Training, and FM 1-100, Army Aviation in Combat Operations, has caused DES to re-look our focus to coincide with these new manuals. The unit's Battle Focus and Mission Essential Task List (METL) will now become the DES Battle Focus. No, our mission has not changed, but we will fly with aviators who are performing tasks commensurate with their unit's METL. We will not evaluate tactics, but we do desire to be a part of your operations order, rehearsal, mission, and after-action review. Tactical training scenarios should have been developed in support of your Aircrew Training Program, which should support your unit's mission or contingency plans.

AFRS

In September 1990, Version 3.0 of the Automated Flight Record System (AFRS) was sent

to over 250 aviation units worldwide. Version 3.1 will be distributed by January 1991. The Technical Support Branch of the DES has been working diligently to provide the aviation operations user the best product possible. We ask your help in providing us direct feedback on how we can improve our product by utilizing our 24 hour help line (Comm. 205-255-4280 or DCN 558-4280). We will also answer any questions or assist if necessary. In the January 1991 time frame, an AFRS survey will be sent out. We ask your assistance in responding to the survey in a timely matter so we can assess our product. The survey results will help us in our development of Version 4.0 and in determining when to mandate the use of the AFRS in Army Aviation.

AAawe

In January 1990 the proponentcy for the AAawe was transferred to DES. Due to resource constraints, a 1991

AAawe was not provided. A USAAVNC message, DTG 251300Z SEP 90, Subject: Army Aviation Annual Written Evaluation, was sent to the field with the following guidance: if an aviator receives a grade below 70% on the AAawe in 1991, the Test Control Officer (TCO) will retest with the previous version (i.e., aviator takes Version 1 exam in 1990, he/she will take Version 2 in 1991; if he/she receives a failing grade on Version 2, retest with Version 1). Each TCO will keep a record of the version taken on the individual's Standard Evaluation Gradeslip (DA Form 4507-R). The gradeslip will be filed in the Individual's Aircrew Training Folder (IAF).

TC 1-210

TC 1-210, Commander's Guide to the Aircrew Training Program, is undergoing its final review and scheduled for distribution in March 1991. The Directorate of Evaluation and Standardization has been working closely with the Department of Tactics and Simulation (DOTS), which is the proponent for the circular. The revised circular provides definite guidance and structure to the present program. Some key areas affected by the revision are: Environmental Training Programs will now be established commensurate with the unit's mission and contingency plans. Aircraft Survivability Equipment (ASE) training will be established based on the unit's equipment and the fielding of the ASET II trainer. Many of the night vision goggle messages have been incorporated into the Commander's Guide, which, when (DES — continued on p.61)



LTC Sieving is Director, U.S. Army Directorate of Evaluation and Standardization, USAAVNC, Ft. Rucker, AL.

PERSONNEL:

NEWS FOR AVN ENLISTED SOLDIERS

BY LIEUTENANT COLONEL J. DAN KEIRSEY

ALEXANDRIA, VA — The conflicting requirements of European troop cuts, reductions in the strength of the Army, and DESERT SHIELD are making Enlisted Personnel management a busy and interesting business right now. However, we are lucky to have a skilled group of Senior NCOs and civilian technicians who are doing a superb job looking out for the professional development of the 25,000 CMF 67 and 93 soldiers and NCOs in the Aviation Branch. A complete directory of your branch representatives appeared in the October 1990 edition of ARMY AVIATION MAGAZINE. We are here to put the personal touch in the personnel business.

As the new Aviation Enlisted Branch Chief at PERSCOM, I wanted to take this opportunity to pass along some observations about DA centralized selection boards and what they look for when picking SFC, MSG, and SGM/CSM for promotion.

The Army seems destined to get smaller and more competitive, but there will still be ample opportunity for promotion. As an example, we can look at the 11 October 1991 MSG promotion list. The overall selection rate in CMF 67 was 37.4%. In CMF 93 the overall selection rate was 25.3%. Compare those figures with the overall Army average of

11.1%. Aviation NCOs did extremely well and can anticipate better than average selection rates in the future if projected Army requirements remain firm.

Commanders need to take note here that Senior NCO promotions are driven by requirements in each MOS. The rates are always lower than comparable officer rates and many good NCOs do not get selected.

Studies of the NCOs selected for promotion from the past few years regularly validate a group of common characteristics. When all of them are present in an individual's records, they will almost surely be promoted.

- *Stay in leadership positions.* Varied assignments with a heavy concentration of leadership positions characterize most selectees. Soldiers that have avoided the demands of being a leader and who seek out the easy jobs are effectively removing themselves from the competition. Boards find it easy to pick these folks out.

- *Work in your MOS.* Although limited assignments

outside of the MOS as a Drill Sergeant, TRADOC instructor, or other special duties are important and should be done well, the biggest payoff comes from consistently serving in hard core MOS-related duties in a tactical unit. "Muddy Boots" are important to boards who tend to pick soldiers in their own image.

- *Keep the best possible photograph in your file.* When a board member opens your file and the picture stares him in the face, you have "reported to the board." Inescapable conclusions about you are immediately formed in the observer's mind. Take the time and effort to make sure your picture is the best possible and keep it current.

- *Review your microfiche and other records regularly.* Boards promote based on your official file. You may be the best thing to ever happen to Army Aviation, but no one will know that if the printed record of your accomplishments doesn't accurately convey that message.

- *Take care of the basics.* Don't neglect the obvious indications of success. Do well in whatever job you have. Stay physically fit and within the prescribed weight limits. Do not rely on the tape test—boards don't believe in them. Continue to do well on the SQT until it is displaced by the forthcoming Self Development Test. Take additional education opportunities in both civil and military subjects.

That's all there is to it. The most effective and knowledgeable personnel manager for your career is yourself. Start now in charting out a long term plan for success based on the simple guidelines in this article. ■■■■



**LTC Keirsey is
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Aviation
Enlisted,
PERSCOM,
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HARDWARE:

STATE OF THE A.R.T. PROGRAM

BY MARK J. VALCO

CLEVELAND, OH — The Propulsion Directorate of the U.S. Army Aviation Systems Command (AVSCOM) conducts research and development in the field of rotorcraft propulsion systems. The Propulsion Directorate is located at the NASA Lewis Research Center in Cleveland, OH and operates in a partnership arrangement with NASA. Through the partnership, both organizations address their common interests and accomplish more with their allocated resources by conducting programs jointly.

As part of the propulsion research, an Army funded, joint Army/NASA program was initiated to develop and demonstrate lightweight, quiet, and durable drivetrain systems for next generation rotorcraft. In 1988 contracts were signed for the 45 month preliminary design and component validation phase of the two phase Advanced Rotorcraft Transmission (ART) program. The contract participants are Bell Helicopter Textron, Inc., Boeing Helicopters, McDonnell Douglas Helicopter Company, and Sikorsky Aircraft.

The ART program addresses the drivetrain requirements for two different next generation aircraft types. One aircraft type is the Future Air Attack Vehicle (FAAV) which is a 10,000-20,000

lb. aircraft planned for tactical air support and air-to-air missions. The other aircraft type is the Advanced Cargo Aircraft (ACA) which is a 60,000-80,000 lb. aircraft planned for heavy lift field support operations.

The purpose of the ART program is to achieve and demonstrate an advancement in the state-of-the-art (SOA) of rotorcraft drivetrains. The SOA advancement is measured by the three specific goals of the ART program:

- reduce drivetrain weight by 25%;
- reduce transmission noise generation by 10 dB;
- increase reliability to a level of 5,000 hour Mean Time Between Removal (MTBR).

These goals are recognized as being ambitious but realistic. Implementation of the ART improvements will impact next generation aircraft performance, flight crew fatigue and cockpit communication, and operational readiness and support.

In the first phase of the ART



Mr. Valco is an aerospace engineer, AVSCOM Propulsion Directorate, Lewis Research Center, Cleveland, OH.

program, each contractor is required to select one of the next generation aircraft types, define SOA baseline weight, noise, and MTBR levels, conduct drivetrain configuration trade studies, select a drivetrain configuration, evaluate ART mission impact, detail design the ART components, and finally, test the critical component technologies.

Of the four ART program contractors, three selected the FAAV configuration. To satisfy the FAAV mission both Bell Helicopter Textron, Inc. and Boeing Helicopters selected Tactical Tilt Rotor vehicles. The McDonnell Douglas Helicopter Company's ART program FAAV configuration is a helicopter with their NOTAR™ anti-torque system. Sikorsky Aircraft selected the ACA vehicle and configured it as a very large helicopter with a single main rotor and a tail rotor.

The ART drivetrain selected by Bell Helicopter Textron, Inc. consists of two stages of thrust balanced helical gearing and a final high-contact ratio planetary stage with an investment cast titanium carrier that has an integral lubrication system. Boeing Helicopters' ART drivetrain also has two helical gear stages but it has a double helical final planetary stage and makes extensive use of ceramic rolling element bearings. McDonnell Douglas Helicopter Company selected a novel split torque/planetary hybrid transmission configuration for their ART gearbox which includes a unique face gear arrangement to achieve torque splitting. The large three engine ACA led Sikorsky Aircraft to select a split path main gear box which features



an elastomeric torque splitting concept, herringbone bull gear, and ceramic spherical roller bearings.

All of the ART program contractors recognize the weight reduction advantages available through the use of advanced gear and bearing steels which provides strength increases and permit higher temperature operation. Some of the other technologies being investigated and implemented by the contractors include high speed and overrunning clutches, component integration for parts reduction, precision near-net-shape gear forging, high-temperature

lightweight alloy castings and composite materials, high precision gear tooth profile geometries tailored for noise reduction and improved strength, increased operating temperatures for cooling system weight reduction, noise control through active force cancellation, and detailed structural analysis for component design optimization.

Mission impact studies indicate that ART program technology results in substantial range or payload increases for the aircraft. Alternately, resizing the aircraft for the same FAAV and ACA missions, while

recognizing the ART program improvements, yields a smaller aircraft with reduced power and fuel requirements.

The contractors are currently completing their detail designs and are preparing for the component validation testing. At this time the ART program weight and reliability goals appear to be achievable. The level of noise reduction is most difficult to predict, but major progress toward the 10 dB reduction is anticipated. The second phase of the ART program will demonstrate complete full-scale ART transmissions in the mid 1990's.

IIII

AIR TRAFFIC CONTROL:

FROM CONCEPT TO REALITY

BY FRANK H. DENNIS

FORT RUCKER, AL — The U.S. Army Air Traffic Control Activity (USAATCA) receives many inquiries concerning equipment needs. One of the most commonly asked questions is, "When am I going to receive this piece of equipment I requested last month?" Questions such as this present a real problem for controllers turned acquisition specialists. Thoughts of "days gone by" fill your mind when trying to answer such a question. A real deficiency has been identified and the waiting period begins. One year turns into two and so forth until, finally, engineers begin to show up asking questions about where a certain piece of equipment is going to be installed.

Is the process responsive? Obviously, there are different opinions on this question. The functional need (controller) believes the system isn't responsive. The equipment specialist believes the system could be improved. So the title of "bureaucrat" is thrown around the air traffic control field and the mention of red tape is commonplace.

ATC requirements are identified primarily in two ways. First, the user determines that a deficiency exists. This type of deficiency usually identifies local operational needs or safety issues.

The second means of identifying requirements is called "top driven." This method identifies programs mandated by Department of Defense (DoD) or Department of Army (DA). Normally, this requirement will be used to resolve life cycle, interface, interoperability, or standardization deficiencies.

Bottom-Driven Request

The bottom-driven request consists of the local facility chief identifying a deficiency and requesting that a "fix" be applied to the problem. A Facility Request (FR), the formal document to initiate a project, is sent through the Major Army Command (MACOM). After the MACOM approves the FR, it is forwarded to the U.S. Army Air Traffic Control Activity (USAATCA). The USAATCA, Development Office, Requirements Division, receives the request and proceeds to validate the requirement by performing a site requirement survey. During the site survey, visits are made with local

officials to provide advanced notice of possible projects/programs. By this point in the process much information has been gathered and the clock has been running. Requirements development is one of the most important phases of the entire acquisition process. Without a well defined and prepared requirements document, the resultant end item may not resolve the deficiency. After the requirement has been validated by the USAATCA, it is returned to the MACOM for approval. The MACOM has 60 days to comment on the proposed requirements document. Once approved by the MACOM, the project is passed to the Programs Division, USAATCA.

The Programs Division prepares a Project Initiation Request (PIR), a fixed-base requirements document, and forwards it to DA for approval and implementation. After approval, DA will provide the approved requirements document to the Program Manager (PM) responsible for the acquisition of ATC equipment.

Budget Planning

Top-driven requirements are processed much the same way as the bottom-driven ones, except that top-driven requirements usually involve a large group of facilities, e.g., life cycle replacement of nondirectional beacons. The integration of many areas is considered during the planning process. One of the most important areas of consideration during the implementation phase of a project is budget planning.

The budget planning process is a multilevel, complicated, and lengthy process. This process



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requires constant attention and coordination between participants at each level. For ATC programs, the process consists of three major funding categories: Major Construction, Army (MCA); Aircraft Procurement, Army (APA); and Operation and Maintenance, Army (OMA). The USAATCA plans and programs for APA and OMA requirements while the MACOMs plan and program for MCA requirements. Once funding is secured, the PM will implement the various phases of each project.

The PM

The PM procures hardware and software for each project by contracting with industry, joint acquisition with other branches of the military service, or joint acquisition with the Federal Aviation Administration.

The PM has tasking authority over various support agencies and coordinates the overall management of the project. Depending on the scope of the project, this process can take from 90 days to 5 years or more to complete.

Remember, the more complex the project, the longer it will take to accomplish and satisfy the user's requirement. The USAATCA seeks the cooperation and patience of each participant in the ATC acquisition process. As always, good things come to those who wait. ■■■■

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published, will eliminate the necessity for numerous messages.

Graduate Survey

The Directorate of Evaluation

and Standardization administers a Graduate Survey Questionnaire Program designed to evaluate the adequacy of courses taught at the United States Army Aviation Center, Fort Rucker, AL. The program provides DES with a systematic and economical means of gathering data in the field. This program has taken on renewed emphasis due to funding constraints which have restricted on-site evaluations.

The goal of this program is to ensure that students are receiving adequate training on tasks which they are expected to perform in the field. It therefore tells us if our training programs are relevant to the needs of the field commander. The current program covers seventeen courses and we are in the process of expanding this to involve even more.

Two Sections

The questionnaires are comprised of two major sections. The first tells us the graduates' general background and training status in the unit. The second is a list of tasks they were required to learn during training at school. The graduates are then asked how confident they are with their knowledge of these tasks. The IPs or supervisors are also asked to evaluate the competence of the graduates.

We see this program as a valuable tool in continually upgrading the training here at Fort Rucker. Its effectiveness depends upon your response, which has been outstanding. Continued support with this program will ensure commanders are receiving the best trained soldiers possible. ■■■■

MWOs

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total aviation MWOs in the TOE Army and improve the overall warfighting capability of the Aviation Branch. Another important result is the placement of MWOs in positions commensurate with their training and experience at the apex of their functional career tracks.

Since assignment management is predicated on authorized requirements and the distribution of the available inventory, a special effort is underway to begin controlling and assigning aviation MWOs according to the new position coding. This requires detailed identification of the projected MWO inventory, recontrolling their MOS' to match the new specialties, then aligning the Officer Distribution Plan (ODP) to support these changes. All this is in progress now in anticipation of TOE updating which may take 12 more months to complete. Meanwhile, all Aviation brigade commanders will soon be asked to submit interim changes and coordinate with their respective MACOMs in requisitioning MWOs with the skills and qualifications needed in their command.

Over the next several months, Warrant Officer Division and the Officer Distribution Service of PERSCOM will be working together to make this new plan succeed with our constant objective of placing the right person, with the right skills, into the right job at the right time. The cooperation, support, and input of aviation commanders at all levels is essential as we transition into a new era of assignment and utilization of our Aviation Master Warrant Officers. ■■■■

ARNG
continued from page 55

cient. The training strategy is to integrate safety into the everyday activities and operations. The National Guard Bureau conducts formal training courses in addition to those offered by the active Army and intensively manages the limited quotas for the courses taught by the Army Safety Center.

The main objective of safety awareness is to prevent accidents causing injury and/or property damage by bringing safety concerns into the open through presentations, meetings, seminars, standdowns, and conferences. By integrating safety into all activities, safety becomes the normal way of doing business for our aviation personnel. Safety awareness is the product of discipline. Disciplined soldiers and operations are inherently safe.

So why did the ARNG have a successful year in safety? What's been stated so far can be found in any safety program and has been ongoing for many years! The difference can be found in the concern demonstrated by the leadership. During July 1989 the ARNG aviation program experienced several serious aviation accidents over a short time frame. To stem this adverse trend the Director of the Army National Guard, MG Donald Burdick, and COL John J. Stanko, Jr. (Ret.), Director of Safety for ARNG, quickly devised a special countermeasure.

A special conference was set up in August for the expressed purpose of analyzing the ARNG aviation program and determining what had changed that may be causing an increase in the number of accidents. COL Stanko chaired the meeting, MG Burdick's presentation set the tone, and the SAAOs wrestled with the problems looking for solutions. At the end of three days, 13 problem areas were listed. Each SAAO returned to his home state to discuss each problem area with his people and was prepared to return at the annual management conference to solve the problems. In October most of the problems were resolved and those that required

action by higher levels were referred to the proper agency.

The point is that safety came to the forefront of concern over all other operational and mission considerations. The leaders of the ARNG aviation community were focused on the safety program. Loss of life and aircraft became the number one item of business. The concern of the commander will be the concern of every member of the command. By placing emphasis on safety and integrating it into everyday business, we can focus on our mission. TQM practiced from the senior leadership to the individual aviation soldier works. ■■■■

MQS
continued from page 10

system. Unit commanders should ensure that their pinpoint accounts reflect both lieutenant and captain authorizations by branch. The U.S. Army Publications Distribution Center will ship the new manuals based on specific unit requirements.

The Aviation Branch manual is currently being staffed in final draft. We have targeted a fielding date of March 1991. The U.S. Army Aviation Center will print and distribute the branch manuals to all aviation lieutenants and captains. Once the manuals are fielded, distribution to newly commissioned officers will be accomplished through attendance at the Officer Basic Course.

There it is—a thumbnail sketch of our challenging, officer-leader development program. Self-study is the mortar which binds together and hones the skills and knowledge acquired through institutional training reinforced by challenging field assignments. MQS is a valuable tool for you as future leaders, to guide your study and for your commanders to aid you in achieving the highest professional and technical standards. Remember, MQS is a system of training founded on the philosophy that officers are ultimately responsible for their duty performance; MQS is a means through which you can achieve superior performance and preparation essential to our present and our future. ■■■■

AWARDS AND HONORS

The following information is provided by the U.S. Army Aviation Center at Ft. Rucker, AL:

Initial Courses:

Class 90-1 AH-1 Track (08/3/90): 2LT David J. Rude, Dist. Grad.

Class 90-1 AH-1 Track (08/3/90): WO Michael G. Gilmore, Dist. Grad; WO Edward O. Henderson, Jr., Honor Grad.

Class 90-4 UH-1 Track (08/17/90): 2LT Todd M. Henry, Dist. Grad; 1LT Todd M. Huderle, Honor Grad.

Class 90-4 UH-1 Track (08/17/90): WO Daniel G. Buie, Dist. Grad; WO Francis M. Mastrangelo, Honor Grad.

Class 90-4 OH-58 Track (08/17/90): 2LT Charles T. Tully, Jr., Dist. Grad; 2LT Norman M. Wade, Honor Grad.

Class 90-4 OH-58 Track (08/17/90): WO Adam M. Parra, Dist. Grad; WO William B. Thagard, Honor Grad.

Class 90-3 UH-60 Track (08/17/90): 2LT Dean D. Flint, Dist. Grad.

Class 90-3 UH-60 Track (08/17/90): WO Graham H. Cashwell, Dist. Grad.

Class 90-2 AH-1 Track (08/17/90): 2LT John M. Scott, Dist. Grad.

Class 90-2 AH-1 Track (08/17/90): WO David G. Bixby, Dist. Grad.

Class 90-5 UH-1 Track (08/31/90): 2LT Eric M. Trafton, Dist. Grad; 2LTs David W. Hall and Brett D. Lewis, Honor Grads.

Class 90-5 UH-1 Track (08/31/90): WO David E. Odekir, Dist. Grad; WO Robert G. Bottom, Honor Grad & Leadership Award; WO Kenneth E. Erb, Jr., Honor Grad.

90-5 OH-58 Track (08/31/90): 1LT Anthony D. Fizer, Dist. Grad; 2LT Frank P. Janecek, Jr., Honor Grad.

90-5 OH-58 (08/31/90): WO Kai-Uwe M. Glodowska, Dist. Grad; WO Joseph W. Sandbakken, Honor Grad.

Class 90-5 UH-60 Track (08/31/90): WO Kai-Uwe M. Glodowska, Dist. Grad; WO Joseph W. Sandbakken, Honor Grad.

Class 90-3 AH-1 Track (08/31/90): 2LT Mark J. Herbranson, Dist. Grad; 1LT Jeffrey L. Alverson, Honor Grad.

Class 90-3 AH-1 (08/31/90): WO Frank J. Reis, Dist. Grad.

Class 90-6 UH-1 Track (09/19/90): 1LT Gary K. Polaski, Dist. Grad; 2LT Dennis C. Fehlinger, Honor Grad.

Class 90-6 UH-1 (09/19/90): WO Terry A. Windschigi, Dist. Grad and Leadership Award; WOs Bill Barfknecht & Michael H. Beaudoin, Honor Grads.

Class 90-6 OH-58 Track (09/19/90): 1LT Gary S. Adkins, Dist. Grad; CPT Steven P. Milliron, Honor Grad.

Class 90-6 OH-58 Track (09/19/90): WO Bryan K. Hook, Dist. Grad; WO Edmund J. Coppola, Honor Grad.

Class 90-5 UH-60 Track (09/19/90): 2LT Timothy T. Thompson, Dist. Grad.

Class 90-5 UH-60 Track (09/19/90): WO Phillip G. Thompson, Dist. Grad.

Class 90-4 AH-1 Track (09/19/90): 2LT Harold A. Christy, Jr., Dist. Grad; 2LT Gregory S. DeFore, Honor Grad.

Class 90-4 AH-1 (09/19/90): Collin F. Bailey, Jr, Dist. Grad.

Class 90-7 UH-1 (10/3/90): 2LT Willis N. Dabbs, Jr., Dist. Grad; 2LT Bruce J. Tuttle, Honor Grad.

Class 90-7 UH-1 Track (10/3/90): WO Paul R. Beiter, Dist. Grad; WOs Philip E. Adams and Charles M. Keenan, Honor Grads.

Class 90-7 OH-58 (10/3/90): 2LT Douglas S. Miller, Dist. Grad; 2LT Robert T. Ault, Honor Grad.

Class 90-7 OH-58 Track (10/3/90): WO Tracy A. Peck, Honor Grad; WO Jack G. Jordan, Honor Grad.

Class 90-6 UH-60 Track (10/3/90): 2LT Galen W. Collins, Dist. Grad.

Class 90-6 UH-60 Track (10/3/90): WO Andrew M. Rittenour, Dist. Grad.

Class 90-5 AH-1 Track (10/3/90): 2LT Eric J. Monteith, Dist. Grad.

Avionics Radar Repairer Basic NCO Course (08/31/90): SSG Bradley J. Van Housen, Dist. Grad.

Air Traffic Control Operator Advanced NCO Course (09/28/90): SFC Ruben Lockhart, Jr., Dist. Grad.

Aeroscout Observer Basic NCO Course (09/28/90): SSG Albert L. Butler, Dist. Grad.

Air Traffic Control Operator Basic NCO Course (09/28/90): SSG John W. Mink, Dist. Grad.

ATC Systems, Sxsystems & Equipment Repairer Basic NCO Course (09/28/90): SSG Kenneth J. Snyder, Dist. Grad.

Aviation Operations Sergeant Basic NCO Course (09/28/90): SSG Terry L. Ballard, Dist. Grad.

Class 90-4 Aviation Senior WO Training Course (07/26/90): CW3 Tony H. McWaters, Dist. Grad; CW4 Francis W. Murtagh, CW2 Peter D. Streker; CW3 Charles C. Softe, CW2 David M. Guerra, Honor Grads; CW3 Michael J. Smith, Commandant's List.

Class 90-2 Aviation Officer Advanced Course (07/27/90): CP1s David E. Bassett, Stephen C. Beville, Thomas R. Brew, Jr., Michael J. Coppella, Clifton L. Dickey, William D. Diggle, Keith R. Edwards, Floyd J. Joffrion, Jr., Vincent M. Johns, Steven D. Kline, Daniel J. Layton, Mark S. Meservey, Michael E. Montoya, James F. Mulvehill, Melton D. O'Brien, Jack O. Parkhurst, Michael A. Petrash, Dennis J. Pinigis, John E. Quackenbush, Barry K. Read, Ronald L. Reusch, Douglas H. Rombough, John M. Salazar, Carl J. Simon, Paul M. Steele, Robert J. Ulsen, Paul A. Vitagliano, Russell L. Webb, Julie L. Wirth, Robert S. Wright, Robb K. Wyer, William J. Zaharis, all exceeded course standards.

Class 90-4 MWO Training Course (09/27/90): MWO Robert O. Holmes, Class Leader.

Class 90-5 Aviation Senior WO Training Course (10/4/90): CW4 Karl L. Lukas, Dist. Grad; CW2 Jack D. Bowser, CW2 Robert L. Burnett, CW3 Robert L. Allen, CW3 Richard H. Walch, Honor Grads.

DESERT SHIELD NOTEBOOK

Holiday letters are reaching U.S. servicemen and women stationed in the Persian Gulf in a couple of days thanks to a free electronic mail message program, called "LETTERS FROM HOME." The effort is sponsored by **GE Information Services**, and provides family members and friends with the opportunity to send mail, via home computer and the on-line computer service GENie, directly to U.S. Armed Forces in the Middle East. The letters are sent electronically via GE Information Services' worldwide teleprocessing network to facilities of Saudi-American General Electric Company (SAMGE) in Saudi Arabia. For more information on the GENie service and the free "LETTERS FROM HOME" program, contact GENie Client Services at 1-800-638-9636.

In its continuing effort to support the U.S. troops participating in Operation DESERT SHIELD, **Anheuser-Busch** is donating a second shipment of O'Doul's Non-Alcoholic Brew to the Persian Gulf later this month. Approximately 4,000 cases of O'Doul's will be provided to military personnel serving on U.S. Navy vessels in the Persian Gulf, said O'Doul's Brand Manager Anne E. Suppiger.

In September, Anheuser-Busch donated 22,000 cases of O'Doul's Non-Alcoholic Brew for U.S. troops stationed in Saudi Arabia after Army and Air Force supply officials made inquiries concerning the beverage's availability. Anheuser-Busch also donated \$500,000 to the USO earlier this fall, to establish service centers and provide entertainment for the U.S. troops serving in Saudi Arabia and the Persian Gulf.

Coors Brewing Company donated 500 frisbees, 200 footballs, 800 books, 400 magazines, and other items as part of the "Coors Holiday Care Package," which was mailed before Thanksgiving for distribution to servicemen and women who haven't yet received mail from the U.S. Items from Coors were collected from Nov. 5 through Nov. 15 by V.I.C.E. (Volunteers In Community Enrichment), a Coors volunteer group which set up collection points throughout the company's Golden, CO, facility.

United Way of Greater Tampa, Tampa, FL, launched its Combined Federal Campaign (CFC) kickoff with the help of Brenda Schwarzkopf, whose husband, Commander-in-Chief of the United States Central Command, GEN H. Norman Schwarzkopf, is in charge of more than 300,000 U.S. troops currently in the Middle East. Prior to his Middle East assignment, GEN Schwarzkopf had been stationed at MacDill AFB in the Tampa area. Mrs. Schwarzkopf told kickoff attendees gathered at the James A. Haley Veterans' Hospital that support for United Way is more crucial than ever in the face of today's overall economy.

United Way of El Paso County, El Paso, TX, reports that 11,000 soldiers who are part of the nearby Fort Bliss population of 20,000 have been deployed to Saudi Arabia. The United Way-funded Armed Services YMCA serving Ft. Bliss is continuing its 75-year history of helping military families cope with separation from deployed family members. A YMCA family center is serving as a gathering place for young parents and their children to cook, sew, attend lectures, and participate in other activities designed to alleviate the difficulties of deployment. Because most junior enlisted families must survive on less than \$1,000 per month, the YMCA helps keep them informed about surplus-food programs, low-cost housing availability, and other assistance available to meet basic needs. The agency also provides counseling on topics ranging from marriage to budgeting.

USO President Chapman B. Cox announced the donation of over half a million individual boxes of juice from the Aseptic Packaging Council (APC) in an effort to help quench the thirst of the U.S. forces involved in Operation DESERT SHIELD. The APC, which represents makers of the "drink box," has gathered donations of aseptically-packaged beverages from Coca-Cola Foods, General Foods USA, Ocean Spray, and Delmonte, and has begun the long process of shipping these products to Saudi Arabia. Aseptic packages are well suited to the harsh Gulf environment as they eliminate the need for refrigeration, are extremely safe, lightweight, and are easily transportable.

DESERT SHIELD NOTEBOOK

The latest call-up means that more families are newly eligible for **CHAMPUS** benefits.

If the activated military sponsor is ordered to duty for more than 30 consecutive days, his or her family members may get civilian health care under CHAMPUS, beginning with the first day of the active-duty period. In order to receive CHAMPUS-covered health care benefits, the family members must present one of the following to whoever verifies CHAMPUS eligibility at a health care provider's office:

- ★ A red Department of Defense Guard and Reserve Family Member Identification Card (DD Form 1173-1), along with a copy of the sponsor's active duty orders, or;

- ★ A red Guard/Reserve Dependent ID Card from one of the services (an acceptable substitute for the DD Form 1173-1), with a copy of the sponsor's active-duty orders, or;

- ★ A tan Uniformed Services Identification and Privilege Card (DD Form 1173), or;

- ★ A completed and approved Application for Uniformed Services Identification Card—DEERS Enrollment (DD Form 1172), with a copy of the sponsor's active-duty orders.

Reserve and National Guard family members are enrolled in DEERS (the Defense Enrollment Eligibility Reporting System) when sponsors are activated by the services, and when a family member's individual entitlement is validated—either by normal DEERS enrollment procedures, or from information previously collected from the activated sponsors.

If you're a member of an activated reservist's family, and are filing a CHAMPUS claim, you can help prevent delays in processing by including a copy of the active-duty orders; or a copy of the tan ID and privilege card.

If you've had a CHAMPUS claim denied because of alleged non-enrollment in DEERS, or if you have questions concerning DEERS enrollment, call the DEERS Beneficiary Telephone Center for assistance. The center can be reached between 6 a.m. and 3:30 p.m. Pacific Time, Monday through Friday, at the following toll-free numbers:

1-800-334-4162 (California Only)

1-800-527-5602 (Alaska and Hawaii Only)

1-800-538-9552 (all other states)

According to *The Write Times*, by Positive Parenting of Phoenix, AZ, the **American Association for Marriage and Family Therapists** offer the following tips for coping with family separation:

Accurate information is vital. Families can ease the anxiety of deployment and concern for the welfare of the service person by getting as much information as possible. Attend initial pre-deployment briefings. Speak with public affairs officers, family support groups, and chaplains.

Prepare for the long haul. Setting intermittent goals can help time pass more quickly. Plan special "milestone" activities, outings, or projects such as: a visit to a grandparent, a trip to an amusement park, a favorite movie, or a telephone call to the deployed parent. Work on a special long-term project that is centered around the deployed parent, such as: a family photo album, audio tapes, or a video tape that interviews all your family members and includes such activities such as birthday parties, holiday celebrations, school events, etc. Consider joining or starting a children's group.

Plan for your long distance relationship. Write frequently and consistently. Help all your children to keep in touch with letters—even the very young can communicate with pictures. Encourage the parent who is away to write by including pre-addressed and stamped envelopes.

Address periods of uncertainty. According to studies, even infants are affected by a parent's departure. The at-home parent can reduce strain by normalizing family activities as much as possible. Children need to see that a parent is concerned, but calm. Take time to talk with your children candidly and focus on reducing your child's fears. Calmly deal with questions your child may have. Watch the news together and encourage your child to share opinions. Correct any misconceptions formed due to things they have overheard. If there are questions you can't answer, seek the answers together.

Plan for the reunion. Reunions can be as stressful as departures, so it is important to discuss the reunion from the beginning. Discuss the role of the returning parent with your children. Carry the reunion theme throughout your correspondence to avoid surprises and ease the transition.

BRIEFINGS



LTG Teddy G. Allen, Director of the Defense Security Assistance Agency, was guest speaker during the Annual Banquet of the **U.S. Horse Cavalry Association** on September 22, 1990 at the Warner Center Marriott Hotel in Woodland Hills, CA.

LTG Allen has been the CG of the 101st Airborne (Air Assault) in Fort Campbell, KY, and most recently the Deputy Inspector of the U.S. Army.

One of the highlights of this year's banquet was the presentation of the John Wayne Memorial Award by the U.S. Horse Cavalry Association Chairman, GEN James H. Polk (Ret.), to Michael, eldest son of John Wayne who is President of BATJACK Productions and producer of his father's films like *The Green Berets*.

The USHCA, a non-profit organization was founded in 1976 to preserve the heritage of the Horse Cavalry and to perpetuate its history in the development of our nation. The U.S. Horse Cavalry Association may be contacted at P.O. Box 6253, Fort Bliss, TX 79906-0253. Phone: (915) 562-8818.

Reunion: **114th Air Mobile Company**, later designated 114th Aviation Company (Air Mobile Light), and still later 114th AMC. Former members who served with this unit in Vietnam contact **George J. Young**, 700 Dixie Drive, Enterprise, AL 36330, Telephone (205) 393-3693. Planning is underway for a reunion in 1991.

The **Viet Nam Air Traffic Controller Association** is trying to reach the approximately 15,000 men and women who worked as ATC during the Viet Nam War, incountry and out. They hope to reunite many of these people in class reunions of the ATC school at Keesler AFB and Fort Rucker. Contact: Viet Nam Air Traffic Controller Association, c/o William J. Palmerngunner, P.O. Box 692, Pennngrove, CA, 94951. Telephone: (707) 579-8592.

Jack Braly has been named president of **Beech Aircraft Corporation**, replacing **Max E. Bleck**, who will assume the presidency of the **Raytheon Company**. Both moves will be effective March 1, 1991.

The United States Army has taken delivery of the first two **T800-LHT-T800 engines** from **LHTEC**. These engines will be installed in a United States Coast Guard HH-65 Search and Rescue helicopter, in support of the U.S. Army/U.S. Coast Guard T800 Proof of Concept program. LHTEC is a partnership of General Motors' **Allison Gas Turbine Division** and Allied-Signal's **Garrett Engine Division**.

AEL Industries, Inc. has announced that its AEL Defense Corp. (AELDC) subsidiary has been awarded a \$2.7 million contract modification by the **U.S. Army Aviation Systems Command (AVSCOM)**. This modification requires AELDC to produce six RU-12H Guardrail V avionics upgrade kits. The contract carries an option for AELDC to produce 13 additional kits which would increase the potential contract value to \$8.9 million. The avionics upgrade modernizes communication, navigation, and flight instrument subsystems, including cockpit lighting for Army secure lighting.

Texas Instruments Defense Systems & Electronics Group, under the Balanced Technology Initiative (BTI) program, has received a \$13 million contract from the U.S. Army CECOM Center for Night Vision and Electro-Optics (C2NVEO) to develop four prototypes using low cost uncooled infrared sensor technology.

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To the AAAA Executive Director: As we enter a new decade, U.S. Army Aviation has again been called upon by the nation to turn back the forces of aggression and tyranny, this time in the remote deserts of Saudi Arabia far from home. I know that the members of your association understand the courage and commitment of our soldiers and the challenges confronted by the families and loved ones left behind.

I appreciate the outstanding support that your association has given to the soldiers with packages of personal care items, copies of **ARMY AVIATION MAGAZINE**, and assistance to their families back home. I now ask that you continue your efforts to provide the assistance that is so needed by every soldier and family that is involved in Operation DESERT SHIELD.

On behalf of the entire Army, I extend to you my personal and professional thanks for everything your association has done in response to this national crisis. I believe that your continued support will have a positive and powerful impact on the success of this vital operation.

Carl E. Vuono
General, United States Army
Chief of Staff

To the AAAA President: Army Aviation has played a key and vital role in Operation DESERT SHIELD. During the early stages of the crisis, Army Aviation was a critical force in country. Its mobility and potential firepower was very influential in the overall defense and deterrence an attack on Saudi Arabia. Army Aviation continues to hold the essential maneuver and firepower needed

for desert warfare, especially at night.

Our Aviation Soldiers have endured the extreme environmental conditions during which all expectations for operations and equipment have been exceeded. You can be proud of Army Aviation as we are, for they have excelled in all their assigned missions plus. Your concern and support is greatly appreciated.

I continue to support the efforts of Army Aviation Association and recognize its tremendous contribution and value to the United States Army.

Robert S. Frix
Brigadier General, U.S. Army
Chief of Staff
U.S. Army Central Command

To the Editor: The July 1990 issue coverage of Special Operations Warfare was excellent. I would suggest, however, that whereas 1980 may have been the beginning of Task Force 160, it was by no means the beginning of Special Operations Aviation.

One has to go back at least to 1962 with the formation of the 22nd Special Warfare Aviation Detachment. The aircraft were different then, but the nights were just as dark and the mountains just as hard as they are today. But in spite of the difference, I dare say the excitement level and thrill of being "special" was equally strong then as now.

My congratulations to all lucky enough to have been accepted by the 160th, and good flying "Night Stalkers."

Charles P. Frinks
Project Manager, Heli-III
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WOC William J. Benda, III
WOC Weldon Burton, Jr.
WOC Dennis S. Busch
WOC Rudolph M. Cambre
WOC Rick Carr
WOC Thomas R. Carter
WOC Gary R. Case
WOC Darrell S. Chandler
WOC Richard J. Clark
WOC Edward A. Coleman
WOC Ronald F. Connolly
WOC Thomas J. Cuscito, Jr.
WOC Martin P. Dadswell
2LT James K. Dahmsel
2LT Christopher J. Dawson
WOC Robert C. DeParlee
1LT Manuel C. Dewa
2LT Cynthia A. Dulohery
Mr. Dean T. Fox
WOC Leann Fraka
WOC Christopher T. Freeman
2LT Duke B. Gard
WOC Richard J. Gonia, Jr.
WOC Carlos M. Gonzalez
WOC William M. Hallas
WOC Michael S. Hernegan
2LT John K. Hope
CW2 Emmanuel Irvin
WOC Jeffrey A. James
2LT Douglas L. Jones
SFC Paul D. Jones
WOC John R. Joseph
WOC Karen S. Kelly
1LT Elizabeth F. Kennedy
SGT Francis J. Kilbreth
2LT Troy M. Kindred

WOC Neal T. King
WOC Kristian J. Kirkland
WOC Todd A. Knight
SGT Robert D. Kohlet, Jr.
SGT Alex J. Kolb
2LT Gregory Todd Lang
SGT John J. Larson
WOC James M. LeGault
WOC Jeffrey W. Lesh
WOC Peter P. Letson, Jr.
WOC Frank S. Mancuso, Jr.
WOC Darren A. McLain
SGT Brent A. Meyer
CW4 George C. Miller, Ret.
WOC Johnny A. Moncayo
CW3 Timothy C. Murnahan
SFC Lori A. Nieman
WOC Terence J. Nunes
2LT David C. Ortega
WOC Charles D. Petrie
WOC Perry E. Priestor
WOC Curtis S. Reagan
MAJ Albertus Rietkerk
WOC Richard C. Ruppini, Jr.
WOC Walter M. Sall
WOC Gregory S. Shelley
Mr. Rabon N. Smith
Mr. Flowers Snelgrove
WOC James M. Snyder
CPT Janet M. Stultz
WOC Phillip T. Swafford
WOC Curtis F. Sweet
WOC Richard H. Tanner
WOC David J. Tiesi
WOC Keith A. Treparker
WOC Timothy P. Tucker
WOC Jeffrey E. Urso
WOC Richard A. Varnale
1LT Scott L. Warner
WOC Brennan T. Williams
WOC Stephen M. Wilson
WOC Tracy E. Wood
CPT Roger D. Yoris

BLACK KNIGHTS CHAPTER WEST POINT, NY

CDT John S.D. Feight
SGT Robert M. Walczyk

CENTRAL FLORIDA ORLANDO, FL

Mr. John R. Boyles
CW4 Douglas R. Goin, Ret.
CDT Jon S. Jackson
Mr. Clinton Parker

CHESAPEAKE BAY CHAPTER EDGEWOOD, MD

Mr. David Carey

CW4 Chester F. Kingsman

COLONIAL VIRGINIA CHAPTER FORT EUSTIS, VA

SSG Herman Camacho
Ms. Marlene Moss
Mr. Charles S. O'Connor
Mr. Thomas R. Pearson

CONNECTICUT CHAPTER STRATFORD, CT

Mr. Tom G. Drennen

CORPUS CHRISTI CHAPTER CORPUS CHRISTI, TX

Ms. Lillian S. Fuentes
Mr. Rex E. Musselwhite
Mr. Michael A. Riggins
Mr. Kenneth A. Werner

DELAWARE VALLEY CHAPTER PHILADELPHIA, PA

COL Ronald E. Elliott
Mr. Ronald L. Keene
Mr. Philip L. Kirkpatrick
Mr. R. Markowitz
WOC Stephen J. Steier, Jr.

EDWIN A LINK MEMORIAL CHAPTER BINGHAMTON NY AREA

Mr. Eric E. Darling
Mr. George M. Grooms, Jr.
Mr. Lynn T. Harrison
Mr. Mark J. Harris
Mr. Paul J. Moore
Mr. Victor Polkowski

GREATER CHICAGO AREA CHAPTER CHICAGO, IL

CW4 George Hervatin, Ret.

INDIANTOWN GAP CHAPTER INDIANTOWN GAP, PA

MAJ Ronald H. Teufel

LINDBERG CHAPTER ST. LOUIS, MO

Mr. Vincent Brooks
SFC Michael J. Hagen
Mr. Richard D. Heatherly
Mr. David P. Heberer
Mr. Edward P. Kriesem
CPT Lawrence P. Medler
Ms. Priscilla A. Mullen
CPT William E. Parker
Mr. Michael R. Riley
Mr. Harold B. Stephens
Mr. A. Raino Tifonoff
Mr. Chris R. Vermillion
Mr. Luht L. Young

MAINE CHAPTER MAINE, GERMANY

CW4 Peter A. Miller

MID-AMERICA CHAPTER FORT RILEY, KS

CPT Joseph B. Jellison
WO1 John K. Morgan
WO1 John R. Nyman
CPT Eric E. Smith
WO1 Jerry L. Wolf

MONMOUTH CHAPTER FORT MONMOUTH, NJ

Mr. Joseph F. Bellantoni
Mr. Harold K. Fletcher
Mr. Steven Humphrey

Mr. Frank W. Kurian
Mr. Gary R. Newport
Mr. Tring D. Ngvyen
Mr. Robert Tottan
Mr. Michael R. Wodell

MONTEPEL BY CHAPTER FORT ORD, CA

MAJ Edward C. Hester

MORNING CALM CHAPTER SEOUL, KOREA

Mr. Winston R. Brown
CW2 Kenneth W. Cline
CW4 Greg Reese

MOUNT RAINIER CHAPTER FORT LEWIS, WA

CW3 Frank N. Willet

MUKILTEO CHAPTER EVERETT, WA

MAJ William D. Ashby, Jr.
Mr. Larry R. Bystrom
CW2 Tim V. Gerhard
CW4 Mark S. Hansen
CDR Marshall A. Hanson
Ms. Barb Henry
MAJ Sammy R. Herron
SFC Danny Long
CW2 Michael R. Meder
CW2 Peggy L. Meder
SFC A.W. Ramsey
CPT Jackie L. Reaves
CSM Thomas A. Simerston
MAJ David E. Swanson
MAJ William M. Tague
CPT Joseph A. Trotte
CW2 James H. Webster

NORTH COUNTRY CHAPTER FORT DRUM, NY

WO1 David H. Gorton
CPT Michael J. Jolma

NORTH TEXAS CHAPTER DALLAS/FORT WORTH

Mr. Charles Mchelsen

OLD TUCSON MARANA, AZ

CPT Thomas W. Shea

RHINE VALLEY CHAPTER MANNHEIM, GERMANY

MAJ Duncan S. Clements
MSG John F. Sapanos, Jr.

SOUTHERN CALIFORNIA CHAPTER LOS ANGELES, CA

Mr. Kenneth H. Becker
WOC Annette R. Caultkins
LTC Ronald F. Lebaron, Ret.
Mr. Fred R. Silver
Mr. Stephen C. Smerker

TALON CHAPTER ILLESHEIM, GERMANY

CPT David S. Hamby
CW2 David S. Lumlley
SFC Rafael Rios

TENNESSEE VALLEY CHAPTER HUNTSVILLE, AL

Mr. Cecil L. Long

NEW MEMBERS

continued on page 74

New Members (Cont.)

WASHINGTON DC CHAPTER WASHINGTON, DC

Mr. Roger LaPlante
 Mr. Dean H. Mitchell
 Mr. Carl R. Morin
 Ms. Ann O'Kennon
 Mr. John R. Smith
 Mr. Nicolas Vay
 Ms. Karen L. Walton
 COL Martin C. Wehmhoner, Ret.
 Mr. Jess Wilkins

MEMBERS WITHOUT CHAPTER AFFILIATION

WOC Martin L. Adkins
 LTC Bruce K. Bell
 SGT Jean M. Bezore
 CPT Terrence P. Brewer
 LTC Richard C. Engler
 Mr. Burton D. Figler
 WO1 Victor Figliuolo
 Mr. Bill Gawreluk
 Mr. Harlan C. Hodge
 Mr. Ernest B. Keirstead
 WOC Christopher B. Kelly
 WOC Samuel R. Klein
 Mr. Mark A. Kozlowski
 Mr. Richard M. Less
 CSM Bruce F. Lohm
 WOC Steven S. McBrien
 Dr. Frank A. McMahon
 COL James E. McMahon, Ret.
 CPT Milton F. Mercado
 COL Jack T. Monette, Ret.
 MSG George E. Pavlatos
 1LT Hans Jorg Pilger
 SGT Brian J. Russell
 CPT Joseph L. Sieber
 Mr. Robert L. Simmen
 CW2 Kerry L. Stauffer
 CW4 Howard L. Warrington, Jr.
 MAJ Joshua A. Wertheim
 CW2 Lee F. Wilkins
 Mr. E. James Wilson
 CDT Barry S. Wright
 CW4 Wallace A. Wright, II

**See You In
 St. Louis!
 10-14 April
 1991
 AAAA
 Annual
 Convention**

AAAA NEB MEETING MINUTES

The Winter AAAA National Executive Board meeting was held 7 December 1990 at the Lake Lodge, Fort Rucker, AL. Significant actions included:

RECOGNITION OF MAJ(P) GEMAR. AAAA President, BG James M. Hesson, Ret., officially recognized MAJ(P) Charles D. (Sam) Gemar, Army Astronaut, and presented him with an AAAA Certificate of Appreciation for his support of Army Aviation and AAAA.

PROPOSAL TO ESTABLISH AN ORDER OF ST. MICHAEL. BG Hesson requested MG Rudolph Ostovich, III, Army Aviation Branch Chief, to clarify the criteria, approving authority, and presentation ceremony for the Bronze Medal. MG Ostovich stated that a recipient for the Bronze Medal must have served Army Aviation or the civilian aviation community with distinction and have demonstrated a significant conspicuous contribution in support of the Aviation Branch; must represent the highest standards of integrity, moral character, professional competence, and dedication to duty; and must be nominated for the award by an active AAAA member. The nominee need not be an active AAAA member. Specific award criteria are as follows:

- For officers, demonstrate a significant accomplishment in a leadership position or have contributed substantially towards tactical and technical innovation.
- For enlisted soldiers, demonstrate a significant accomplishment in a leadership position such as platoon sergeant, team leader, section sergeant, etc.
- For civilian nominees, demonstrate successful leadership and managerial competence in support of Army Aviation.
- For all nominees, demonstrate tactical and technical competence at both their level of service and at those of their subordinates.

MG Ostovich clarified that the approving authority for the Bronze Medal would be the first aviation commander in the grade of Colonel; in instances where a chain of command was not applicable, the approving authority would be the local AAAA Chapter President; in instances where both were not applicable, the approving authority would be the Chief of the Aviation Branch. He added that no more than two awards in each calendar year could be granted by the approving authority. The motion to establish the Order of St. Michael Bronze Award and to accept the Bronze Award criteria, nominating procedures and presentation ceremony as presented was approved.

PROPOSAL TO ESTABLISH AN AAAA AIR/SEA RESCUE AWARD. The motion to establish the AAAA Air/Sea Rescue Award sponsored by Lucas Aerospace as an AAAA Functional Award and to accept the criteria and nominating procedures as presented was approved.

CONVENTION: STATUS REPORT ON 1991 ST. LOUIS CONVENTION. Mr. Terrence M. Coakley, AAAA Executive Director, specifically noted TWA as the AAAA's official airline and encouraged all members to mention the TWA Account Number when making reservations for the AAAA Convention to help defray AAAA's costs for Awardee Travel. Mr. Coakley explained that AAAA would receive one free airline ticket for every 40 tickets booked for the AAAA Convention when the AAAA account number was cited.

FISCAL: 1990 FUNDING ALLOCATIONS. BG Hesson asked COL John J. Stanko, Ret., AAAA Secretary/Treasurer, to present the recommendations of the Fiscal Committee for the allocations of excess funds for the year ending December 31, 1990. Based on requests received prior to the NEB Meeting, the Fiscal Committee recommended: \$6,500 for the Emergency Fund, \$10,000 in escrow for the 1992 Hall of Fame Inductions, \$3,000 for the Archives Program, \$20,000 for the Order of St. Michael Program, \$16,000 in escrow to establish the Hall of Fame at the Army Aviation Museum, and \$69,300 for the AAAA Scholarship Foundation.

Since the NEB voted at this meeting to allocate \$10,000 in escrow to support the soldiers in OPERATION DESERT SHIELD (see below), the NEB approved the recommendations of the Fiscal Committee except that instead of \$69,300 allocated

MINUTES continued

to the AAAA Scholarship Foundation, \$59,300 would be allocated to the AAAA Scholarship Foundation, with authority granted to the Executive Group to reallocate up to \$10,000 to the AAAA Scholarship Foundation based on the availability of funds for the year ending 31 December 1990.

AAAA SUPPORT FOR THE SOLDIERS IN OPERATION DESERT SHIELD. BG Hesson noted that a letter from the Chief of Staff of the Army requesting AAAA and other organizations to support the soldiers in Operation DESERT SHIELD was forthcoming (see MAILBOX page 52). BG Hesson referred to the two letters received from COL Gerald and CSM Howard, noting COL Gerald's suggestion that the AAAA President and/or Executive Director attempt to make a personal visit to the troops and CSM Howard's suggestion that AAAA assist in developing a war library for the troops, specifically books on military history, doctrine, and leaders. BG Hesson noted that a letter was also received from BG Frix (see page 72). BG Hesson opened the floor to discussion by the NEB on what else AAAA could do. Suggestions included T-Shirts, Hats, Food Packages, Reading Books for Personal Enjoyment, Decals, and supporting the families at home. There was a consensus of the NEB that: Mr. Coakley forward these suggestions to BG Frix requesting input and a recommendation; COL Carothers provide an estimate of quantity of items that would be needed based on the number of aviation units deployed; Mr. Cribbins investigate the military uniform and cultural restrictions which may have an impact on what AAAA could provide; and Mr. Coakley contact the Center for Military History regarding CSM Howard's request. With respect to support for the families at home, BG Hesson asked all Chapter Presidents to focus efforts in this area. The motion to place \$10,000 of current year funds in escrow to be allocated by the Executive Group based on recommendation of BG Frix and the information provided above was approved.

MUSEUM AFFAIRS: STATUS REPORT. The NEB expressed its appreciation to LTG John J. Tolson, III retiring Chairman of the AAAA Museum Affairs Committee for his efforts and welcomed his successor, MG George S. Beatty, Jr., Ret. Discussion then centered on the relationship between the AAAA and the Museum Foundation. The motion that, subject to the availability of funds, the AAAA place \$1.00 per member in escrow annually based on the membership count at November 1 in support of the Museum, was approved.

NOMINATIONS FOR NEB ELECTIVE OFFICE. The Nominations Committee recommended the following persons to serve on the NEB: Mr. William Pollard for the industry slot that would be vacated by COL Sylvester C. Berdux, Jr., Ret., Mr. Joseph P. Cribbins to extend for another term; and LTG Jack V. Mackmull, Ret., for the slot that would be vacated by BG Hesson, Ret. MG Putnam advised the NEB that the election would take place during the AAAA Membership Luncheon on Thursday, April 11, 1991, in St. Louis, MO.

AAAA NEB NOMINATIONS

In accordance with the AAAA By-Laws, notice is hereby given that in addition to the nominations recommended by the National Nominations Committee for those National Board offices in which vacancies occur at the time of annual election, floor nominations may be made at the general membership business meeting held at the Annual Meeting, provided that the name of the floor nominees appear on nomination petitions signed by twenty-five (25) members of the Association and said petitions are provided to the Chairman of the National Nominations Committee at the AAAA National Office at least thirty (30) days prior to the conduct of the Annual Meeting of the Association.

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a two year
membership for
the price of one
for all first-time
new members.

Join the
professionals!

Join AAAA.

See membership
application
on page 70.

New AAAA Chapter Officers

Alaha:

MW4 Paul R. Wilson
(Secy.); 1LT James E.
Sullivan, III (VP, Prog.).

Arizona:

CW4 Clifford D. Brunstig
(VP).

Aviation Center:

COL(P) Thomas J. Konit-
zer (Pres.).

Citadel:

CDT David E. Bass, Jr.
(Pres.).

Corpus Christi:

LTC James R. Boren
(Pres.).

Mid America:

CW4 Charles D.
Hutchinson (Sr. VP); CW4
Eugene T. Garrett (Treas.);
CW2 Thomas D. Perkins
(VP, Corp. Rel.); CW3
Gregory T. Schullo (VP,
Prog.); CW2 Dean Mitchell
(VP, Pub.); COL James L.
Mowery (VP-at-Large).

Morning Calm:

MAJ Tadeusz S. Maciuba
(Secy.).

Monterey Bay:

COL Kief S. Tackaberry
(Pres.).

Phantom Corps:

COL Joseph W. Eszes
(Pres.); COL Larry Turnage
(Sr. VP); CW4 Reid D.
Feltmate (VP, Enroll.); Ms.
Becky A. Snyder (VP, Civ.
Aff.); COL William S. Reeder,
Jr. (VP, Pub.).

Stuttgart:

1LT Frederick J. Evans
(Secy.).



The Corpus Christi Chapter hosted its 1st Annual Awards Luncheon on 11 October 1990. Honorees included (above, left to right) Francoise "Fifi" Cymes, Volunteer of the Year; Mr. and Mrs. Jimmie Johnston, Best Supporting Industry; Norma San Miguel, Leadership Award; Nancy Alexander, Top Gun Membership Award; Lois Contreras, Civilian of the Year; and LTC James R. Boren, President's Award. Other awardees were Juri Koern (Community Service Award) and SSG Steven Klatt (NCO of the Year).

Recipient of the Corpus Christi Chapter's AAAA Aviator of the Year Award, DAC William "Wild Bill" Angle (below), poses with his plaque. Mr. Angle is a Master Army Aviator and is rumored to be the oldest test pilot in Army Aviation.





Above, McDonnell Douglas Helicopter Company President Thomas M. Gunn (right) was awarded a plaque by Arizona Chapter President James Stewart (left). Mr. Gunn spoke to the Chapter in September. The Arizona Chapter also presented a special plaque to Jason Spears, the chapter's first college scholarship recipient. Jason, son of LTC and Mrs. Edward Grazier, received \$2,000 to help defray his educational costs at Arizona State University, where he is majoring in pre-med.

Guest Speaker COL Michael F. Boyd was presented a memento of appreciation during the Tennessee Valley Chapter's Luncheon Meeting held on 13 September 1990. Below, Chapter President LTC Gar Crask, Ret., (left) looks on as COL Boyd (right) shows off his plaque.



New Chapter Activation

An activation meeting was held on 3 November 1990 at the Everett, WA Quality Inn to form AAAA's newest chapter.

First order of business was to select a chapter name. The membership settled by majority vote on Mukilteo (MUK-L-TEO), an Indian word meaning "meeting place." The elections for the Chapter Executive Board were held and the following chapter officers installed:

CW4 John S. Clayton (Pres.); CPT Daniel Hoskins (Sr VP); CW2 Michael R. Meder (Secy); CSM Thomas A. Simenson (VP, Memb.); and MAJ David E. Swanson (VP, Prog.).

Aces

The following members have been declared Aces in recognition of their signing up five new members each.

CSM Johann Ciboth
WOC William F. Cox
CW3 Butch Daniel
WO1 Brenda M. Hellerman
1SG Patrick Hull
WOC Michael D. Morgan
WOC Lonnie D. Rash
WOC Lester A. Self
CW3 Susan R. Wheeler

New Industry Members

EER Systems Corporation
 Vienna, VA

New Sustaining Members

Doss Aviation, Inc.
 Enterprise, AL

Oscar L. Seay, Jr.

Mr. Oscar L. Seay, Jr., of Vernon, AL, died from a heart attack on 12 October 1990. Mr. Seay had been employed by DynCorp in Ft. Worth, TX, until his retirement two years ago. He was a AAAA member since 1971.

Earl F. Schlesinger

Earl F. Schlesinger, 57, of Freeburg, IL, died Wednesday, 1 August 1990, at St. Elizabeth's Hospital in Belleville, IL.

Mr. Schlesinger had retired from AVSCOM, St. Louis, MO, where he worked with the CH-47 PMO. Preceding him in death were his father, Earl H. Schlesinger, and his mother, Cleola Schmidt Schlesinger.

Surviving are his wife, Charla M. Schlesinger, whom he married 22 October 1955 in Chicago, IL; a son and daughter-in-law, Lt. Commander Select Robert D. and Denis Schlesinger of Chesapeake, VA; a daughter, Mrs. Diane L. Ballot of Phoenix, AZ; step-mother, Marie A. Schlesinger; a brother and sister-in-law, Dale E. and Betty Schlesinger, of Belleville; three grandchildren, Denise Ann and David Andrew Ballot, Ryan Paul Schlesinger.

Mr. Schlesinger had been a member of AAAA since 1982. Memorials may be made to the American Heart Association.

AAAA anticipates offering \$100,000 aid in 1991 for college-entry Freshmen

■■■BACKGROUND:

The AAAA Scholarship Foundation, a separate non-profit, tax-exempt corporation created to render financial assistance to selected members of the Army Aviation Association of America, Inc. (AAAA) and selected spouses, unmarried siblings, and unmarried children of current and deceased AAAA members, expects to make available \$100,000 in assistance funds for the 1991 college-entry year.

■■■SCHOLARSHIP GRANTS AND LOANS:

A minimum of thirty scholarships will be presented—ranging from \$1,000 to \$12,000 grants given out as one, two, or four year scholarships; five \$4,000 interest-free loans (\$1,000 a year); a \$2,000 scholarship (\$1,000 a year) to an eligible applicant pursuing a two-year associate degree in an aeronautical-related science; a \$4,000 scholarship (\$1,000 a year) to an eligible applicant pursuing a four-year B.S. degree in an aeronautical-related science; and a \$3,000 scholarship available to students planning to attend St. Louis University.

■■■AWARD PHILOSOPHY:

The AAAA National Scholarships are awarded primarily on the basis of academic merit and personal achievement.

■■■APPLICATION PROCEDURE:

To apply, please request a Scholarship Grant/Loan Application and return it to the AAAA Scholarship Foundation, 49 Richmondville Avenue, Westport, CT 06880-2000 on or before May 1, 1991 (postmark will govern). On our receipt of the completed application, you will be mailed further instructions and assigned an AAAA interviewer. All forms, together with other supporting data, must be returned to the Foundation on or before June 15, 1991 for consideration by the AAAA Awards Committee (postmark will govern).

■■■ELIGIBILITY CRITERIA:

An applicant must be a citizen of the United States who has been admitted to an accredited college or university for Fall 1991 entry as a freshman. The AAAA member to which the applicant is related must have an effective date of membership on or before March 31, 1990. All eligible applicants shall first be considered for scholarship grants and then, if requested by the applicants, considered for the loan program.

■■■SELECTION AND NOTIFICATION:

Selection of winners will be made by the AAAA National Awards Committee during mid-July with each applicant to receive a list of the winners not later than August 1, 1991.



Pictured above are AAAA Trainer of the Year CW4 Michael S. Kather, flanked by Mr. Howard DeCastro (left), President of CAE-Link Training Devices, and Army Aviation Branch Chief, MG Rudolph Ostovich, III (right) on the occasion of the award presentation.

AAAA CALENDAR

A listing of recent AAAA Chapter events and upcoming National dates.

January 1991

- ✓ **Jan. 12.** Official Activation Meeting of the Central Ohio Chapter. At Rickenbacker Consolidated Club, Bldg 800, 1800 hrs.
- ✓ **Jan. 19-26.** Chesapeake Bay Chapter's Whistler/Blackcomb Canada Ski Trip. Contact Debi Horne at 879-5168/671-1740.
- ✓ **Jan. 23.** Aloha Chapter General Membership Meeting. Speaker: J. Kagdis, Schofield Barracks Officer's Club, 0830.

February, 1991

- ✓ **Feb. 2.** AAAA Nat'l Awards Committee. Meeting to select CY90 Nat'l Award Winners.
- ✓ **Feb. 6.** AAAA Outstanding Aviation Logistics Support Unit of the Year Award Presentation

and AAAA Industry Award Presentations. Stouffer Concourse Hotel, St. Louis, MO.

- ✓ **Feb. 6-7.** 17th Annual Joseph P. Cribbins Product Support Symposium sponsored by the AAAA Lindbergh Chapter. Stouffer Concourse Hotel, St. Louis, MO.

April, 1991

- ✓ **April 10-14.** AAAA Annual Convention, Cervantes Convention Center, St. Louis, MO.
- ✓ **April 10.** AAAA NEB Meeting, St. Louis, MO.

October, 1991

- ✓ **Oct. 14.** AAAA National Executive Board Meeting, Sheraton Washington Hotel, Washington, D.C.

AAAA National Trainer of the Year

CW4 Michael S. Kather was awarded AAAA Trainer of the Year on 6 December 1990, at the Officers' Club, Fort Rucker, AL during the 1990 Aviation Center Chapter's Annual Awards Banquet.

The AAAA award, sponsored by CAE-Link Corporation, is presented annually to the military or civilian trainer who has made an outstanding individual contribution to Army Aviation during the previous calendar year.

CW4 Kather is the Team Leader for the Air-to-Air Stinger New Equipment Training Team which supported world-wide fielding of Air-to-Air Stingers. This effort encompassed the established fielding to major aviation units deploying to southwest Asia. His recommended changes to the missile guidance system were implemented, improving the accuracy of the missile.

Under his leadership, CW4 Kather's team dramatically enhanced aviation readiness to conduct operations for Operation DESERT SHIELD and future operations.

Concurrently, as standardization officer, he was responsible for developing, implementing, and monitoring Initial Entry Rotary Wing, Instructor Pilot, and Methods of Instruction Programs of Instruction for OH-58 aircraft at the Aviation School.



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